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ILLINOIS FARM ECONOMICS

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CHICAGO MILK PRODUCERS BENEFIT FROM UNIFORM SEASONAL PRODUCTION

The seasonal demand for fluid milk in Chicago differs considerably from the seasonal milk yield of cows, if the cows are left to follow normal conditions of nature. In contrast to the normally heavy flow of milk during spring and early summer, the Chicago market demands only 5 to 6 percent more fluid milk in April, May, and June than in September, October, and November. The fact that this difference exists raises the following questions in the minds of producers:

Is dairying more profitable if milk production is made to fit the seasonal fluid milk demands of the Chicago market than if its production is allowed to fluctuate so that the herd produces most of its milk during the spring and summer months? If the answer to the above question is that a uniform milk production is more profitable, what methods can be used to fit the seasonal production of a dairy herd to the seasonal demands of the Chicago fluid milk market?

Contrast in Seasonal Milk Production. In a cost study made on more than 80 dairy farms in twelve counties in northern Illinois during 1936 and 1937, a total of 173 yearly cost records was obtained. The average dairy covered by this study produced milk more evenly during the year than did the average of all the dairies in the Chicago dairy area. However, the seasonal variation from farm to farm was wide enough to furnish a basis for analyzing the relative profitableness of even and uneven seasonal milk production in the two groups as well as the differences in herd management.

This basis was the percent that the milk produced in April, May, and June was of that produced in September, October, and November. The group of even producers included those dairies in which the spring production was from 100 to 120 percent of the fall production. The seasonal production of this group was most nearly in line with the seasonal consumption of fluid milk in the Chicago market. The average spring production of the even producers was 108.6 percent of their fall production compared with 105.2 percent for a similar measure of fluid milk consumption on the market. The group of uneven producers included all the dairies in

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

which the spring production was over 140 percent of the fall production. These dairies showed the greatest variation in monthly milk production.

May and June were the months of highest milk production for both the even- and the uneven-producing herds (Table 1 and Fig. 1). The uniform milk production of the even-producing herds throughout the year is evidenced by the fact that the extreme variation in daily herd production

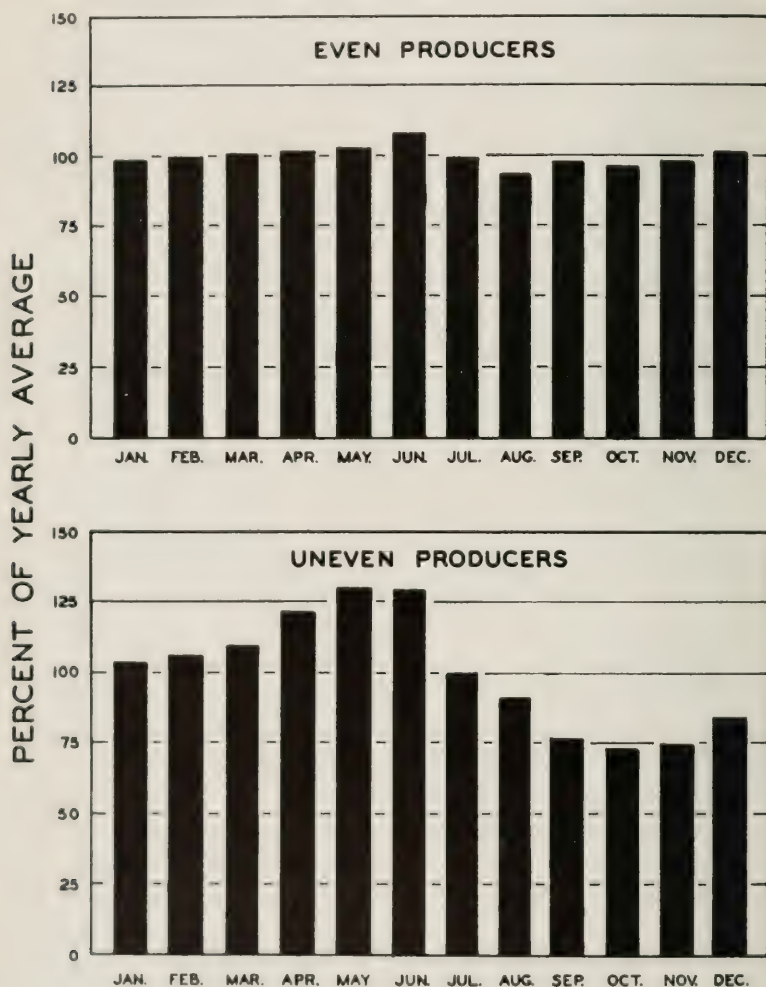


FIG. 1.—MONTHLY MOVEMENT OF DAILY MILK PRODUCTION PER HERD AS PERCENT OF YEARLY AVERAGE OF CHICAGO AND ADJACENT AREAS, 1936 AND 1937

TABLE 1.—DAILY HERD PRODUCTION IN PERCENT OF YEARLY AVERAGE ON THE EVEN- AND UNEVEN-PRODUCING FARMS, CHICAGO AND ADJACENT AREAS, 1936 AND 1937

Month	Even producers	Uneven producers
January.....	99	104
February.....	100	106
March.....	101	111
April.....	102	122
May.....	103	130
June.....	110	136
July.....	99	100
August.....	93	87
September.....	97	77
October.....	96	73
November.....	97	75
December.....	101	85
Extreme monthly range in production.....	10	57
Average daily herd production of milk (pounds).....	504	424

from month to month, expressed in percent of yearly average, was only 10 points whereas it was 57 points for the uneven-producing herds.

Costs, Incomes, and Profits of Even and Uneven Production. The difference per year between the cost of production and the income received by the even producers averaged \$462.37 per herd, or \$22.25 per cow. The uneven producers received only \$119.17 per herd, or \$6.26 per cow. Some may ask the question: "Was not the difference in profit due to the difference in price received for the milk from the two groups of herds?" A large part of the difference in profit was due to this difference. But the difference in price was primarily due to the facts that the quality of milk sold differed and that even producers had a greater percentage of their milk in the high-price months.

The higher net profit of the even producers was due to the fact that,

TABLE 2.—FACTS CONCERNING COSTS, INCOME, AND PROFITS FOR EVEN AND UNEVEN PRODUCERS, CHICAGO AND ADJACENT AREAS, 1936 AND 1937

Item	Even producers	Uneven producers
Number of cows per herd.....	20.8	19.0
Annual milk production per cow (lb.).....	8 863	8 141
Annual feed cost per cow.....	\$80.29	\$70.12
Annual pounds of digestible nutrients fed in grain and protein concentrates.....	1 968	1 596
Annual pounds of total digestible nutrients in all feed (including pasture).....	6 684	6 156
Total digestible nutrients per 100 pounds of milk (lb.).....	75	76
Annual net cost per cow.....	\$146.12	\$132.46
Production cost per 100 pounds of milk.....	1.65	1.63
Price received per 100 pounds of milk.....	1.90	1.70

TABLE 3.—PRODUCTION COST AND PRICE RECEIVED PER 100 POUNDS OF MILK ON EVEN- AND UNEVEN-PRODUCING FARMS, CHICAGO AND ADJACENT AREAS, 1936 AND 1937

Month	Cost per 100 pounds		Price received per 100 pounds	
	Even producers	Uneven producers	Even producers	Uneven producers
January.....	\$1.90	\$1.87	\$1.97	\$1.75
February.....	1.92	1.87	1.96	1.75
March.....	1.85	1.82	1.91	1.70
April.....	1.82	1.68	1.79	1.60
May.....	1.45	1.23	1.69	1.48
June.....	1.21	1.05	1.66	1.48
July.....	1.36	1.24	1.70	1.60
August.....	1.53	1.44	1.86	1.73
September.....	1.36	1.74	2.01	1.92
October.....	1.57	1.84	2.06	1.94
November.....	1.83	2.19	2.11	1.92
December.....	1.84	2.08	2.13	1.94
Weighted yearly average.....	\$1.65	\$1.63	\$1.90	\$1.70

in spite of the added costs that they incurred to meet the required sanitary regulations in production, they produced their milk at practically the same costs as the uneven producers, one-half of whom made no attempt to meet the requirements of fluid milk (Table 3). If the extra costs to the even producers for producing Grade A milk were eliminated, their net cost per 100 pounds of milk would have been substantially less than the net cost of the uneven producers. The even producers kept the cost of producing 100 pounds of milk down by obtaining greater efficiency in the use of the cow's capacity. They fed their cows so that the production of the animals was held at a high, even level. As a result, the yearly average production per cow was 8,863 pounds compared with 8,141 pounds for cows in uneven-producing herds, or about 9 percent more:

Milk going into manufactured uses is subjected to few, if any, city or state sanitary regulations; whereas, fluid milk must meet various rigid sanitary restrictions, thereby increasing the cost of production. Furthermore, price premiums are used to encourage fluid milk producers to produce their milk more evenly throughout the year. The average price spread between the condensery milk price and the fluid milk price for 1936 and 1937 was 39 cents per 100 pounds of 3.5 percent milk. The 20 cent spread in average price received by the two groups of producers appears to be well in line with differences in their costs of producing Grade A and condensery milk because only one-half of the uneven producers and practically none of the even producers sold to manufacturing plants.

The higher average yearly price that the even producers received for

TABLE 4.—COWS FRESHENING AND MILKING EACH MONTH IN PERCENT OF
AVERAGE ON EVEN- AND UNEVEN-PRODUCING FARMS,
CHICAGO AND ADJACENT AREAS, 1936 AND 1937

Month	Cows freshening		Cows milking	
	Even producers	Uneven producers	Even producers	Uneven producers
January.....	94.3	96.5	98.5	100.5
February.....	85.3	104.1	97.5	99.4
March.....	100.8	139.7	99.2	101.3
April.....	77.5	110.5	98.9	104.6
May.....	103.3	81.3	96.9	107.2
June.....	89.1	49.5	101.2	103.8
July.....	96.9	67.3	98.9	104.1
August.....	107.2	61.0	96.6	98.5
September.....	120.1	124.4	100.6	94.0
October.....	127.9	104.1	103.7	96.7
November.....	80.1	124.4	102.4	93.4
December.....	117.5	137.1	105.7	96.6
Average.....	100.0	100.0	100.0	100.0

milk was also, in part, the result of their having a greater volume of milk for the market during the high-price months. This again was obtained by practicing a breeding and feeding program that had as its express purpose the production of a large volume of milk in the months when prices were higher.

If the price received for milk from August, 1939, to September, 1940, under the flexible price plan was applied in place of the actual price received by the producers in 1936 and 1937, the even producers would again have made a greater profit by \$5.51 per cow than the uneven producers would have made. A true comparison cannot be made between costs in 1936-1937 and prices in 1939-1940 because the same ratio may not have been maintained between them. However, these figures indicate that even milk production is more profitable than uneven milk production under the present Chicago price plan.

Even Production the Result of Good Herd Management. From the herd management standpoint, seasonal milk production can be controlled without the outlay of additional capital. An analysis of the herd production and management records showed that the factors of greatest significance in governing seasonality of production were (1) the time of the year when cows freshened, (2) the number of cows milking each month, and (3) the kind and quantity of feed fed each month.

The even producers practiced a breeding program in which relatively equal numbers of freshenings occurred at 2-month intervals throughout the year, with slight increases in the fall months to maintain production

in the normally low season. The uneven producers followed a program of having two definite freshening periods, one in the fall months and another in the late winter and early spring months. The number of summer freshenings of the latter group was very low, and the fall-freshening period came too late in September to maintain milk production in the usual low winter period. The range in the percent of cows freshening from the month of lowest freshenings to the month of highest freshenings was 40 points greater for the uneven producers than for the even ones (Table 4).

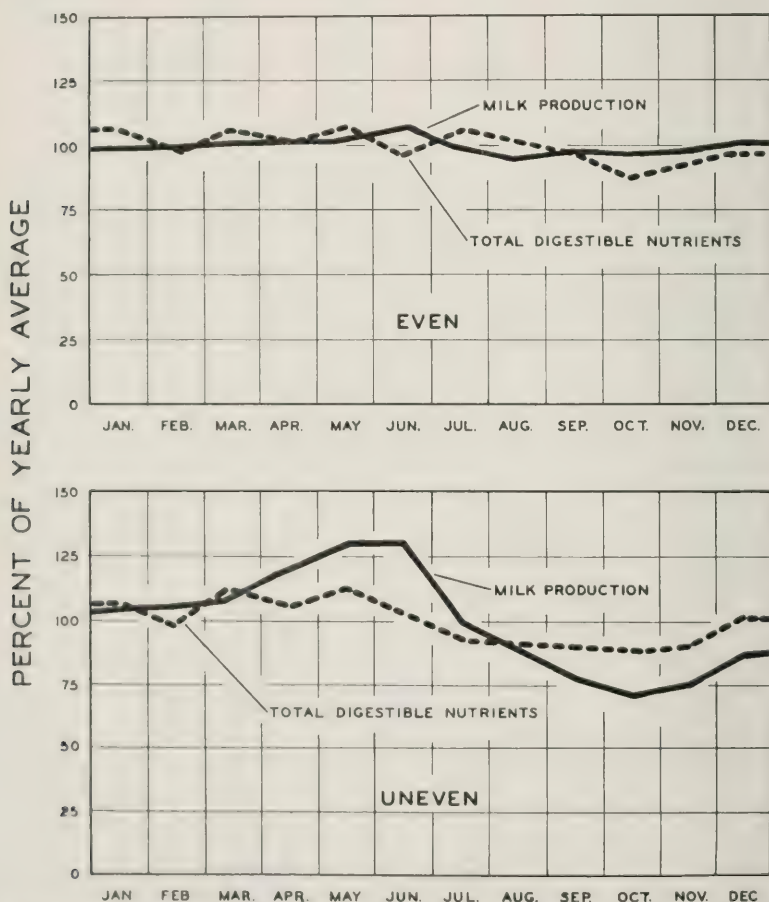


FIG. 2.—RELATION OF THE TOTAL DIGESTIBLE NUTRIENTS CONSUMED TO MILK PRODUCTION IN THE HERDS OF EVEN AND UNEVEN PRODUCERS, CHICAGO AND ADJACENT AREAS, 1936 AND 1937

The number of cows milking each month showed a close relationship to the monthly milk production. This relationship was influenced by the cows' freshening and going dry as well as by any purchases and sales of milking cows.

The even producers fed from 1 to 1¼ pounds more grain and about 15 percent more protein concentrates per cow per day during the year and

TABLE 5.—POUNDS OF DIGESTIBLE NUTRIENTS IN GRAIN AND IN ALL FEED PER COW ON EVEN- AND UNEVEN-PRODUCING FARMS, CHICAGO AND ADJACENT AREAS, 1936 AND 1937

Month	Total digestible nutrients in grain and protein concentrates		Total digestible nutrients in all feed (including pasture)	
	Even producers	Uneven producers	Even producers	Uneven producers
January.....	190	170	598	550
February.....	187	161	555	512
March.....	190	184	597	578
April.....	178	189	563	547
May.....	139	131	606	582
June.....	120	91	532	530
July.....	136	80	595	478
August.....	159	96	560	463
September.....	159	106	540	473
October.....	162	113	489	461
November.....	168	126	512	476
December.....	180	162	539	515
Average.....	164	133	557	513

fed them more uniformly than did the uneven producers (Table 5 and Fig. 2). The uneven producers relied more completely on pasture in the summer to supply the necessary feed nutrients. Similar amounts of hay and pasture were utilized by both groups. Although the even producers fed larger quantities of feed to their cows in more equal amounts each month than the uneven producers, the feed fed per hundred pounds of milk was nearly the same for both groups.

Even seasonal milk production, therefore, was profitably obtained from herds in the Chicago and adjacent areas by following a breeding program so managed that a uniform number of cows freshen each season of the year and by feeding concentrates uniformly to the cows both winter and summer. Although the total yearly feed consumption of the cows in even production will be somewhat higher than that of the cows in uneven production, the additional milk yield of the cows will be in the months when market prices are enough higher to more than equal the cost of the additional feed.

K. E. KINSINGER and R. H. WILCOX

LARGE LAND HOLDINGS IN ILLINOIS¹

The current trend toward larger operating units in some sections of Illinois has focused attention upon the existence of large holdings of rented farm land. Casual observation of this significant trend has led some persons to believe that the number and size of large holdings have also been increasing.

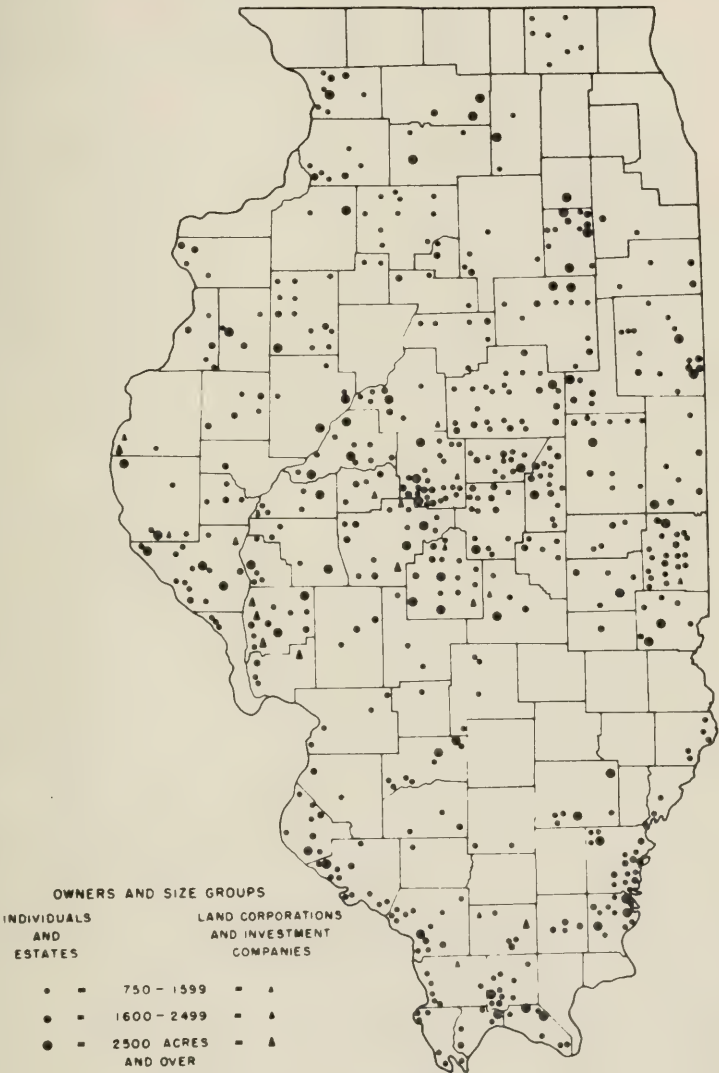
Data that were obtained in a recent study conducted by the University of Illinois in cooperation with the United States Department of Agriculture throw some light on tenant problems, land ownership, and taxation. The size and location of 605 holdings—each of 750 or more acres—were secured, and an analysis of information concerning them has provided a basis for appraising the trend and present importance of large-scale ownership. These data also indicate that large operating units and large ownership tracts coincide only in exceptional cases. In the majority of cases, the large holdings studied were composed of several scattered tracts, each usually a separate farm, and were seldom operated by the same individual. Minor exceptions have occurred in river bottoms where large block holdings are frequently operated by one individual and in central Illinois where adjoining farms have occasionally been purchased and consolidated into a single operating unit.

The 1900 Census obtained considerable data which are of value in indicating the trend in the number and the size of large holdings over a period of about 40 years. This Census showed that 8.9 percent of the total rented acreage in the state was owned by landlords with 1,000 or more acres. In 1939, the 605 holdings of 750 or more acres accounted for 1,112,698 acres of rented farm land, or about 6 percent of the total rented acreage reported by the 1935 Census. After allowances are made for additional holdings for which records were not obtained in 1939, apparently not more than 8 percent of all the rented land was owned by individuals and agencies who may be referred to as large-scale landowners. This percentage does not include the 3 or 4 percent owned by insurance companies and lending agencies. Such holdings have been omitted from this analysis because the property has been acquired under quite different circumstances and will be held for shorter periods of time. Thus, because the 1900 Census included the holdings of lending agencies and defined large landowners as those owning 1,000 or more acres, only a general comparison can be made.

These facts, therefore, suggest that, although the land holdings of some individuals are accumulating continually, other holdings that were

¹The basic data were secured from AAA records. The author alone, however, is responsible for the interpretation of the data and for any opinion expressed.

LOCATION OF LARGE HOLDINGS OF RENTED FARM LAND, ILLINOIS, 1939*



* Based upon 939 records of A A A

TABLE 1.—NUMBER AND ACREAGE OF PRIVATE INDIVIDUAL AND ESTATE
HOLDINGS OF 750 OR MORE ACRES OF RENTED LAND BY
TYPE-OF-FARMING AREAS, ILLINOIS, 1939

Type-of-farming area		Number of county holdings ^a	Percent of total number of holdings	Total acres in holdings	Average acres in holdings
No.	Descriptive name				
1	Chicago Dairy and Truck	7	1.2	7 540	1 077
2	Northwestern Mixed Livestock	24	4.2	40 593	1 691
3	Western Livestock and Grain	56	9.9	80 116	1 431
4	East Central Cash Grain	251	44.2	452 686	1 804
5	West Central General Farming	76	13.4	128 872	1 696
6	St. Louis Dairy and Wheat	42	7.4	61 805	1 472
7	South Central Mixed Farming	23	4.1	36 390	1 582
8	Wabash Valley Grain and Livestock	41	7.2	62 190	1 517
9	Southern Fruit and Vegetables	48	8.4	66 206	1 379
	Total sample for state ^b	568	100.0	936 398	1 648

^aA county holding consists of 750 or more acres of rented land in one county owned by one individual. If the same individual owned 750 or more acres in other counties, each holding was considered to be another holding. Thus, 10 owners had county holdings in each of 2 counties; 4, in each of 3; 3, in each of 4; and 1, in each of 6.

^bAlthough an attempt was made to obtain all such holdings in the state, others not shown in this table are known to occur.

acquired in past decades or in previous generations are being gradually broken up and divided among heirs or sold to farmers and others. This situation has been especially true of holdings in river bottoms and holdings acquired in central Illinois in connection with drainage operations and railroad developments during the early period of settlement.¹

Distribution of Holdings. The location and size of 568 holdings of 750 or more acres are shown on the accompanying map. A close association with soil and type-of-farming conditions is evident. Thus, 44 percent of the total number of large holdings was found in the cash grain area of central Illinois, and these holdings averaged approximately 1,800 acres. The flat productive land in this area is well adapted to grain farming, and the subsequent ease with which farms can be managed and rents collected makes farm property a more attractive investment than are those in some other parts of the state.

A concentration of large holdings will also be noted along the Wabash, Illinois, and Mississippi rivers where drainage and levee operations have required amounts of capital in excess of that available locally. Consequently, large acreages of such land have been developed during past decades by businessmen and others who lived outside the local community and who were seeking a long-time investment. Many of such holdings are in large tracts and are frequently subdivided into smaller operating units. However, the majority of the large holdings in other parts of the

¹Gates, P. W., Disposal of the Public Domain in Illinois, 1848-1856, Journal of Economic and Business History, 3, p. 216-240, 1931.

TABLE 2.—NUMBER AND ACREAGE OF HOLDINGS OF 750 OR MORE ACRES OF RENTED LAND OWNED IN ILLINOIS BY SELECTED TYPES OF LANDLORDS, SAMPLE OF 605 HOLDINGS, EXCLUSIVE OF THOSE OWNED BY LENDING AGENCIES, ILLINOIS, 1939

Type of landlord	Number of holdings ^a	Total acreage	Average size of holdings	Percent of total	
				Number	Acreage
Men.....	335	536 309	1 601	55.4	48.2
Women.....	98	144 508	1 474	16.2	13.0
Estates.....	105	253 413	2 413	17.4	22.8
Coal companies ^b	19	69 809	3 674	3.1	6.3
Educational institutions ^c	10	20 714	2 071	1.6	1.8
Commercial organizations ^d	11	16 519	1 502	1.8	1.5
Corporation farms.....	9	28 543	3 171	1.5	2.6
Investment companies.....	7	24 820	3 546	1.2	2.2
Private recreational groups ^e	5	8 996	1 799	.8	.8
All others.....	6	9 067	1 511	1.0	.8
Total sample for state.....	605	1 112 698	1 863	100.0	100.0

^aA holding is all the land owned by one individual or agency, whether in a single block or in scattered tracts.

^bA considerable proportion of this land is in abandoned strip mines and is not under cultivation.

^cThese institutions are mainly colleges, although a very few townships and district schools still own scattered sections and quarter-sections.

^dThis group includes lumber companies, oil companies, railroads, gravel companies, etc.

^eSeveral of these holdings are hunting clubs along the Illinois river and contain little agricultural land.

state are not subdivided in this manner because they are more often made up of scattered farms. A summary of the distribution of large holdings by farming-type areas is shown in Table 1.¹

Many of the large holdings in central Illinois were purchased many years ago at low prices from railroads or from the federal government and have remained intact, frequently as undivided estates, up to the present day. Artificial drainage was necessary over a great deal of this area to bring the land into production, and outside capital was instrumental in bringing this drainage about at a time when local residents did not have the necessary capital.

Types of Large-Scale Owners. Although men were the largest class of owners, the importance of estates and institutional landlords other than lending agencies cannot be overlooked. Over 20 percent of the total acreage of large holdings was owned by estates, whose average size of 2,400 acres was considerably above the average. Women also owned a significant number of large holdings as a result of inheritances (Table 2). The men who owned large holdings may be divided into two principal groups.

One group consists of retired farmers who have been able to accumulate such holdings by inheritances and by investments of savings during their lifetime. In some instances members of the family operate the land

¹A. H. Harrington, Assistant in Agricultural Economics, assisted in the tabulation of these data and in the preparation of the tables and map.

and will eventually pass it on to heirs who may in turn operate the land themselves. Other examples may be found where members of the original family no longer operate the property, and the entire acreage has been placed on the general farm rental market.

In contrast to these holdings which have been of long standing are those acquired in recent years under quite different circumstances. Low interest rates on deposits in banks, lack of alternative investment opportunities, uncertainties of price-level movements, and fear of inflation have been important underlying factors causing a pronounced flow of urban investment capital into rural properties during the last 10 years. Numerous mortgage foreclosures by private mortgage holders during and following 1932 have also been responsible for the acquisition of additional holdings of farm property by urban investors. Although most individuals have acquired but one or two farms as a result of these factors, a few have expanded their holdings, frequently on the expectations of price rises, to a point where they may be termed large-scale landowners. Whether such holdings will increase in size and extent or will be liquidated will depend largely upon the trend in the price of farm land and the rate of return in comparison with other forms of investments.

The management of the holdings owned by the average large-scale owner is of considerable importance because of the large investment involved. Thus, a holding of 1,500 acres in east-central Illinois would represent an investment of approximately \$150,000, even at a conservative valuation. Most of the men were found to be supervising their farms themselves, although 23 individuals whose holdings averaged 2,400 acres each had personal agents or professional managers. Nearly a third of the women, however, reported agents; and their holdings exceeded the average holdings of women who did not report agents by approximately 400 acres. The 105 estates averaged 2,413 acres each and were of necessity managed by agents or heirs because the original owners were deceased. The remaining 67 holdings, different types ranging in size from 1,500 to 3,000 acres, were also managed by agents because the owners were corporations.

Significance of Large Holdings. The tendency for numerous individuals to own large tracts of land in Illinois and in other parts of the midwest arises principally out of certain inherent characteristics of the land and the type of farming. Wherever urban individuals can pay more for land as an investment than farmers can pay for it for their own use, we may expect a certain number of individuals to own what appears to be a disproportionate share. There is little evidence, however, that this tendency has reached an injurious extent in Illinois.

In the absence of a pronounced trend toward an increase in the concentration of ownership, we may well turn our attention to a consideration of the part which such holdings play in the tenancy system. Obviously, the owners of such holdings can seldom operate the entire property themselves; and, in most cases, they acquired the land with tenant operation in mind. Such holdings are looked upon as long-time investments to a greater extent than are most single-farm holdings of retired farmers and widows, the more typical landlords in the state. Many of the more progressive large-scale owners have been willing and able to furnish above-average accommodations for their tenants and have been instrumental in introducing good farming practices on their property. In many cases, these leasing practices have been adopted by other landlords and tenants in the surrounding community. The tenant may also have greater assurance of a long period of occupancy than he has on properties which may become estates within a few years. The less efficient tenant, however, may find his position less secure than with other types of landlords because frequently the investor-holder places more emphasis on securing the largest possible returns and consequently demands maximum efficiency in operation. After considering both the extent and the characteristics of large-scale ownership, however, such ownership seems to have been responsible for serious tenancy problems only in special cases.

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ILLINOIS HAS NEW RANKING IN FARM LAND COMPARISONS

The 1940 Census, like those that preceded it, shows Illinois to be in the forefront of the nation's leading farm states. The importance of Illinois from an agricultural standpoint arises mainly from the five following factors: (1) its size and the prominence given its areas devoted to grain and livestock production; (2) the variety of conditions in its agricultural economy; (3) its location in the great farming and consuming region of the upper Mississippi valley; (4) the ease of access that its farmers have to large local markets as well as to other markets, both domestic and foreign; and (5) the youthfulness and, at the same time, the maturity of its agriculture.

Compared with 47 other states, Illinois registered gains in rank between the 1930 and 1940 Census reports (1) in number of farms, (2) in value of farm land as distinct from farm buildings, (3) in acres of land in corn, (4) in acres in all harvested crops, and (5) in acres of plowable pasture. The rank was raised in some of the preceding items just because

the figures for Illinois shrank less than those of some other states. On the other hand, the shrinkage in Illinois figures accounted for a loss of rank in relation to other states in value of farm buildings per acre. Colorado, one of the several Western states that showed marked expansion in farm area, caused Illinois to lose one rank in total number of acres in farms.

In number of farms operated by tenants and in percentage of farms so operated, Illinois was tenth and fifteenth in rank, respectively.

In total state value of farm land, apart from improvements, Illinois stood second in 1940—just below Texas and only slightly above Iowa. In average value of land alone *per farm*, Illinois stood third—below California and Nevada. In average value of land alone *per acre*, Illinois had no peer.

Some reasons for the high value of the average Illinois farm per acre are the following: (1) the high average productivity of much Illinois land; (2) topographic and other factors favorable to low-cost production in many counties of the state; and (3) farm operators with a degree of responsiveness to opportunities, some incident to a rising level of technical knowledge in agricultural production and marketing.

A comparison of Illinois with other states in high-ranking positions in real estate and in some other significant items is shown in Table 1.

Proportion of Nation's Realty Values. In every \$1,000 of total value of farm land and buildings in the United States in 1940, \$80 was in Iowa; \$77, in Texas; \$75, in Illinois; and \$64, in California (29.6 percent of the nation's farm realty value in four states). Compared with ten years earlier, Illinois and Texas showed an increase in the percentage which their values of farm land and buildings represented in the national total, and Iowa and California showed a decrease.

When the value of farm buildings is disregarded and the value of farm land alone considered for the country as a whole, the following results become apparent: Texas had \$94 in every \$1,000 in 1940; Illinois and Iowa, each \$82; and California, \$77 (33.5 percent of the nation's total in four states). The position of Texas is mainly due to the large acreage of farm land in that state, and Illinois, Iowa, and California are among the highest ranking states in value per acre of farm land. In fact, ten years before, Iowa, with its high land values, preceded Texas in state totals of land value, and California and Illinois ranked third and fourth, respectively.

In valuations of farm buildings alone, four states accounted for a fourth of the United States total. In each \$1,000 value of farm buildings in the country in 1940, \$76 was in Iowa; \$61, in Illinois; \$60, in Ohio;

and \$57, in Wisconsin. Ten years previously, the corresponding figures were \$80 in Iowa, \$60 in Illinois, \$58 in Wisconsin, and \$55 in New York. The advance of Ohio to third rank in 1940 resulted in displacing New York from the four highest ranking states and pushing Wisconsin, with substantially the same proportion of the national total value of farm buildings in 1940 as in 1930, back to fourth place. Illinois gained slightly in proportion of the national total, and Iowa lost considerably, both without change of rank.

Rank in Average Realty Values per Farm. In value of farm land and buildings in an average farm, the figure for California in 1940 was the highest in any state (\$16,340). Nevada, a state of large-sized farms and relatively high valuation of buildings, ranked second (\$13,320). Iowa (\$12,600) and Illinois (\$11,900) ranked third and fourth. Ten years before, the five leading states were California, Nebraska, Iowa, Nevada, and Illinois.

Rank in Average Size of Farm. The value of a farm is the product of two factors; namely, the number of acres per farm and the value per acre of farm land and buildings. In the Rocky Mountain division, the average farm for five states contains more than 1,000 acres, Wyoming (1,866 acres) being the largest. Eighteen states west of the Mississippi river precede Iowa (160 acres). East of the Mississippi river, the average farm acreage ranges from 155 acres in Vermont to 61 acres in Massachusetts. Illinois (145 acres) was second among states east of the Mississippi and therefore twenty-first in rank for the country as a whole. Both Iowa and Illinois held the same ranks in 1940 as in 1930 despite changes in average farm sizes. A preponderance of states with average farm acreages less than that in Illinois showed decreases, and those with average farm acreages larger than that in Illinois showed increases. Although the increase in Illinois as a whole was only 1.6 percent compared with an increase of 10.9 percent in the country as a whole, parts of the state showed more marked change.

Rank in Realty Values per Acre. Of like importance to size of farm is the value per acre of farm real estate. For both land and buildings, the values per acre in the six leading states in order of value in 1940 were: Connecticut, New Jersey, Rhode Island, Massachusetts, Illinois, and Iowa, the averages ranging from \$135 down to \$79. In 1930, Iowa was fourth, preceded by New Jersey, Connecticut, and Massachusetts and followed by Rhode Island, California, and Illinois.

In value of farm buildings per acre in 1940, Illinois was fifteenth in rank with an average of \$20.63. The following midwestern states out-

TABLE 1.—RANK OF ILLINOIS IN SELECTED AGRICULTURAL COMPARISONS, 1940

Real-estate item	United States		East North-Central states ^a		Illinois		Rank of selected states					
	Amount		Amount	Percent ^b	Amount	Percent ^b	Ill.	Ia.	Ind.	Ohio	Wis.	Tex.
Number of farms	6 097 ^c		1 006 ^c	16.6	213 439	3.5	11	4	16	7	15	1
Acres in all the farms	1 060 507 ^c		113 655 ^c	10.7	31 032 572	2.9	13	10	21	19	18	1
Acres per farm	174 ^c		113	....	145	....	21	19	29	9	24	10
Value of farms (land and buildings)	\$33 641 739 ^c		\$7 330 631 ^c	21.8	\$2 537 177 ^c	7.5	3	1	8	5	9	2
Per farm	4 823		7 289	....	11 887	....	4	3	19	26	23	24
Per acre	31.16		64.50	....	81.76	....	5	6	10	8	14	40
Value of land alone	\$23 239 177 ^c		\$4 597 966 ^c	19.8	\$1 896 966 ^c	8.2	2	3	8	9	12	1
Per farm	3 812		4 570	....	8 888	....	3	4	20	26	28	14
Per acre	21.91		40.46	....	61.13	....	1	4	8	9	16	35
Value of buildings alone	\$10 405 086 ^c		\$2 735 664 ^c	26.3	\$ 640 151 ^c	6.2	2	1	9	3	4	10
Per farm	1 707		2 719	....	2 999	....	10	5	19	15	7	38
Per acre	9.81		24.07	....	20.63	....	15	12	14	9	10	42

^aIllinois, Indiana, Michigan, Ohio, and Wisconsin. ^bPercent of national totals. ^c000 omitted.

TABLE 2.—THE PLACE OF ILLINOIS IN FARM TENANCY, 1940

Item	United States	East North-Central states	Illinois	Rank of selected states ^a									
				Ill.	Ia.	Miss.	Ga.	Ala.	Ark.	Tex.	N.C.	Tenn.	Okla.
Number of tenants	2 361 271	280 342	91 982	10	7	2	4	3	6	1	5	8	9
Percentage tenants were of all farmers	38.7	27.9	43.1	15	11	1	2	4	7	10	14	16	6

^aRank of states not included in the table under percentage tenants were of all farmers: Louisiana, 3; South Carolina, 5; South Dakota, 8; Nebraska, 9; North Dakota, 12; and Kansas, 13.

ranked Illinois in 1940: Ohio, Wisconsin, Michigan, Iowa, and Indiana, their averages ranging from \$29 down to \$21. The very highest averages, however, were in the eastern states, led by Connecticut, \$72 per acre. Ten years previously, Illinois (\$25) was thirteenth in rank, and Iowa was twelfth in rank, as in 1940. Between 1930 and 1940, Indiana and New Hampshire, where the value of buildings decreased less than it did in Illinois, were responsible for reducing Illinois to a lower rank.

In value per acre of farm land, independent of buildings, Illinois (\$61) was in the first rank in 1940. Other leading states were California, \$59; New Jersey, \$58; and Iowa, \$56. In 1930, Illinois (\$83) was preceded by California (\$98), Iowa (\$94), and New Jersey (\$88). Although land values per acre dropped considerably during the first half of the intervening decade, Illinois suffered the least of the four leading states. In Illinois the value per acre of land alone showed a net drop from 1930 to 1940 of 27 percent, compared with declines of 41, 40, and 33 percent in Iowa, California, and New Jersey, respectively.

Rank in Farm Acreage and in Number of Farms. In total acres of land in all the farms, Illinois stood thirteenth in rank in 1940 compared with twelfth in 1930. The first four ranking states both in 1930 and in 1940 were Texas, Kansas, Nebraska, and Montana.

In number of farms in 1940, Illinois (213,439) and Iowa (213,319) stood eleventh and twelfth in the national list, Illinois losing 1,058 farms in 10 years compared with 1,610 farms in Iowa. These twin states of the corn belt had to yield rank to southern states in number of farms, Texas reporting 418,000 in 1940 compared with 495,000 in 1930. Other states between Texas and Illinois in 1930 and 1940 were as follows: Mississippi, North Carolina, Missouri, and Kentucky—all with more than 250,000 farms—and Tennessee, Ohio, Alabama, Arkansas, and Georgia—all with numbers not greatly in excess of those in Illinois and Iowa. The large number of farms reported in the southern states must be interpreted in the light of the census definition of a "farm." Areas worked by croppers, many of whom are employees paid not by cash but by advances of goods and, in final settlement, by a share of the products grown, are not strictly comparable with areas worked by operators, most of whom furnish their own working equipment.

Rank in Tenancy. In number of farms operated by tenants, Illinois (91,982) ranked tenth in 1940. Iowa (101,484) ranked seventh (Table 2). All other states preceding Illinois were southern. However, many croppers were counted as tenants in these states. Texas (204,462) and Mississippi (192,819) had the largest number of tenants, including

croppers. All the states having more tenants than Illinois in 1940 underwent decreases between 1930 and 1940. In Texas, nearly 100,000 fewer "tenants" were found in 1940 than in 1930.

Largely through the reduction of croppers and the growth of direct operation of land with wage hands, the number of tenants in the southern states declined between a third and a fourth. Outside of the southern states, the numbers of tenants declined slightly in Iowa, Illinois, and Kansas and increased in Missouri, North Dakota, South Dakota, and Nebraska.

In percentage of farms operated by tenants, Illinois was fifteenth in rank in 1940. In nine states, over half of the farms were tenant farms. Mississippi (66 percent) and Georgia (60 percent) showed the highest percentages. In 1930, the corresponding percentages for these two states were 72 and 68. Illinois, with 43 percent of the farms rented both in 1930 and in 1940, stood fourteenth in rank at the earlier date and fifteenth in rank in 1940.

A study of rankings on other items throws light upon the rankings in farm realty totals and values and in tenancy. Illinois held ranks in 1940 and in 1930 (1930 in parentheses) as follows:

1. Acres in corn, 2 (3); leader, Iowa.
2. Acres in oats, 3 (2); leader, Iowa.
3. Acres in all harvested crops, 4 (6); leader, Texas.
4. Number of horses and mules, 5 (3); leader, Texas.
5. Number of milk cows, 6 (6); leader, Wisconsin.
6. Number of other cattle, 7 (9); leader, Texas.
7. Number of hogs, 2 (3); leader, Iowa.

Productive livestock, especially cattle and hogs, has been kept by both owner and tenant operators. Oats have waned with the decreased need for horse feed. Thus, the fact that Illinois has lost rank in number of work animals and in acres in oats may raise less question as to soundness of the trends in these items and in values of buildings, so far as reduced need for barn space may be involved.

The tendency for Illinois to forge farther toward the front in farm real estate values during the period 1930-1940 may be explained in the light of several developments:

1. Illinois land values fell so much between 1920 and 1930 that, although the decline continued up to 1933, recovery since that date has made the 1930-1940 net decline less than that in many states.

2. Advances in prices of farm products, supported by various federal programs, have assisted in reducing the amount of distress land and the

risks in farm operation and land ownership, and otherwise have boosted farm incomes in relation to farm costs.

3. Technological advances, both in immediate farm operations and between the farm and the outside world, have probably benefited Illinois more than many other states.

C. L. STEWART

Footnotes for the following page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U.S. Dept. of Commerce; subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸Monthly Indexes of Non-Agricultural and National Income, Supplement, August, 1937, B.A.E.; Demand and Price Situation, or Agricultural Situation. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933 and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural income ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	107	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	87	68	75
1932	65	48	41	69	43	43	62	68	47	58
1933	66	51	45	71	49	51	72	63	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	77	74	87
1936	81	81	86	80	74	82	103	90	86	103
1937	86	86	96	84	80	87	103	95	102	113
1938	79	69	69	80	72	81	101	88	78	88
1939	77	65	65	78	72	81	97	93	92	108
1940	78	68	69	79	78	90	113	98	105	122
1940 Mar.	78	68	66	79	76	98	124	96	100	113
Apr.	79	69	67	80	82	76	96	95	98	111
May	78	68	69	80	80	90	112	96	98	115
June	78	66	65	80	70	71	89	97	100	121
July	78	66	67	79	71	72	90	98	98	121
Aug.	77	66	69	79	71	80	101	99	106	121
Sept.	78	66	72	79	76	84	106	100	112	125
Oct.	79	66	72	79	80	98	124	100	116	129
Nov.	80	68	73	79	80	101	128	102	116	132
Dec.	80	70	74	79	86	105	131	104	122	138
1941 Jan.	80	72	78	80	86	90	112	104	121	139
Feb.	81	71	76	80	84	...	...	105 ¹¹	126	141
Mar.	82	72	76	80	...	...	...	...	...	143 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			March 1940	Current months		
	1924-29	1939	1940		January	February	March
Corn, bu.	\$.81	\$.43	\$.56	\$.51	\$.54	\$.54	\$.56
Oats, bu....	.42	.28	.32	.38	.34	.33	.34
Wheat, bu.	1.30	.67	.81	.93	.81	.76	.79
Barley, bu.....	.66	.41	.46	.46	.49	.48	.48
Soybeans, bu.	1.94	.74	.82	1.00	.91	.83	.89
Hogs, cwt.	9.97	6.56	5.54	4.90	7.70	7.50	7.40
Beef cattle, cwt.	8.57	8.18	8.84	8.10	10.40	9.90	9.60
Lambs, cwt.	12.22	8.18	8.52	8.60	9.00	9.20	9.40
Milk cows, head	78.00	63.00	65.00	64.00	70.00	73.00	72.00
Veal calves, cwt.	11.27	9.15	9.63	10.00	10.80	11.40	10.50
Sheep, cwt	6.52	3.44	3.44	3.70	3.95	4.20	4.70
Butterfat, lb.	.42	.23	.27	.26	.29	.28	.29
Milk, cwt.....	2.32	1.59	1.67	1.55	1.80	1.75	1.70
Eggs, doz.	.30	.16	.17	.14	.17	.14	.15
Chickens, lb.	.21	.13	.13	.12	.14	.14	.14
Wool, lb....	.36	.25	.30	.30	.33	.33	.33
Apples, bu....	1.59	1.07	1.14	1.15	1.20	1.20	1.25
Hay, ton.	13.88	6.05	6.68	7.00	8.20	8.20	8.00
Potatoes, bu.	1.39	.80	.83	.90	.75	.75	.75

¹²For sources of data in tables see previous page.

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Director, Extension Service in
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EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

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G. L. Jordan, Editor

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Number 72

TRENDS IN THE SIZE OF ILLINOIS FARMS

The trend toward larger-sized farm operating units is not a recent development in Illinois. Data from the United States Census reports indicate that this change has been taking place with considerable regularity since 1900 (Table 1).

TABLE 1.—NUMBER, AVERAGE SIZE, AND CHANGE IN SIZE OF ILLINOIS FARMS, 1900-1940 (UNITED STATES CENSUS DATA)

Year	Number of farms in Illinois					Average acres per farm	Decennial in- creases in size	
	Under 100 acres	100-259 acres	260-499 acres	500 acres and over	Total		Acres	Per- cent
1940	83 133	103 150	24 021	3 105	213 439	145.4	2.3	1.6
1935	95 360	110 988	22 567	2 397	231 312	136.9	...	...
1930	80 171	110 471	21 604	2 251	214 497	143.1	8.3	6.2
1925	89 161	115 440	19 149	1 851	225 601	136.2	...	...
1920	95 619	120 614	19 031	1 917	237 181	134.8	5.7	4.4
1910	111 533	118 854	19 440	2 045	251 872	129.1	4.9	4.0
1900	126 646	116 917	18 255	2 333	264 151	124.2	...	...

Except for the period from 1930 to 1935, the number of farms has decreased continually since the beginning of the century and the average number of acres per farm, increased. The reversal of these trends during the depression period, 1930-1935, came as a result of the migration from urban to rural areas, with many families operating small tracts of land as a temporary means of subsistence until other employment conditions improved. This shift in population is reflected in the marked increase in the number of farms under 100 acres in size and the relatively small change in the number of farms in other size groups. However, this unusual situation had changed by 1940, due to reemployment of people in cities, and the trend to larger-sized farms has continued.

Measured either in increase in acres per farm or in percentage of increase in size, the most pronounced changes occurred during the first three decades of the century, with the largest increase occurring between 1920 and 1930. This fact should not be interpreted as an indication that

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

TABLE 2.—PERCENT OF TOTAL ILLINOIS FARM LAND IN FARMS BY SIZE GROUPS, 1900-1940 (UNITED STATES CENSUS DATA)

Year	Acres of land in farms	Percent of total farm land in farms			
		Under 100 acres	100-259 acres	260-499 acres	500 acres and over
1940.....	31 032 572	12.4	54.9	25.8	6.9
1935.....	31 661 205	14.0	57.3	23.5	5.2
1930.....	30 695 339	13.2	58.7	23.1	5.0
1925.....	30 731 947	14.8	60.7	20.3	4.2
1920.....	31 974 775	15.7	60.8	19.3	4.2
1910.....	32 522 937	17.4	(a)	(a)	4.5
1900.....	32 794 728	20.1	56.7	18.2	5.0

*No data available.

A study of farm records kept by Illinois farmers indicates that over the 12-year period, 1926-1937, the average size of farm operating units increased from 199 to 227 acres, approximately 14 percent. In interpreting the data from farm account farms, it must be recognized that they represent the commercial type of farms which are much above the average in size. The amount of labor used per farm did not change appreciably. In fact the major portion of the increase in size of farm operating units has come about as a result of attempts to adjust the size of farm in order to obtain the most efficient use of machinery, equipment, and labor.

The average size of farms shown by the two groups of data varies widely. The census data include all the farms in the state starting at 3 acres or less in size, but the farm account records include very few farms below 100 acres in size. The former represent the agriculture of Illinois as a whole; the latter, above average commercial farming. The majority of Illinois farms, however, are still family-sized farms in spite of this trend to larger units on the commercial farms.

Changes in size of farm should not be interpreted as representing corresponding displacements in agriculture. Size-of-farm data are based on size of operating unit, without any consideration of the number of people obtaining a living from the land. Many of these units are operated by fathers and sons; and, in many instances, two or more families obtain their entire incomes from the land where a smaller unit formerly furnished income for only the operator and a single man. The area of land operated may be larger, but it may also be providing a satisfactory living for more people.

Limited studies indicate that twice as large a percent of the young men beginning farming since 1930 began in partnership with their fathers or someone else as did prior to 1920. The tendency for more sons to begin

farming in this way reflects the difficulty in obtaining farms and the heavy cost of setting up farming with the increased use of mechanized equipment in large-sized units.

Since the advent of the AAA program, many farmers admit that they have rented or purchased additional land because, with the reduction in the acreage of their principal crop, corn, their available labor and equipment enables them to operate a large acreage of land. As indicated by the farm accounting farms, the labor per acre on commercial farms has been materially reduced, as is reflected in the 14-percent increase in average size of farms in a 12-year period with practically no change in months of labor per farm.

Changes by Counties. Data concerning size of farms for Illinois give a very general picture of state-wide trends. Comparable figures for any local area may vary widely from figures for the state. The accompanying map shows the change in average size of farms by counties from 1930-1940. The extremes shown are a decrease of 28.1 acres per farm in Hardin county and an increase of 27.4 acres in Scott county.

The average size of farm has decreased in two general types of areas. Areas surrounding industrial centers, such as Chicago, Peoria, Rockford, and St. Louis, show decreases in average size of farms as a result of an increase in part-time farming by industrial workers. Many of these small acreages were included in the 3- to 10-acre size group in the census report. A decrease in average size was also typical of most of the area of low land value in southeastern Illinois. This fact reflects in part the return of unemployed persons to agriculture during the depression, especially since areas of low land values and small farms normally contribute more new workers for urban industries than do areas of larger farms and more productive land.

The greatest increase in average size of farms occurred in areas along rivers where the amount of bottomland suitable to the use of large-sized equipment is relatively large. Several counties along the river in the southeastern part of the state and a larger number of counties along the Illinois River show the largest increase in average size of farm. Changes within local areas must be explained and interpreted in the light of conditions in the areas.

Summary. The trend to larger farm operating units in Illinois is a normal result of commercial farming and the development of improved mechanical equipment. The average size of farm has been increasing since 1900. The number of farms under 260 acres in size has decreased, but the number over 260 acres has increased. Measured in percent of the total farm land, the greatest decrease has occurred in farms under 100

acres in size and the greatest increase, in farms between 260 and 500 acres. The majority of farms in this latter group are under 340 acres and are family-sized. This is indicated by farm account records which show the use of about 21 months of total labor per year. The months of available labor per farm have hardly changed over the past fifteen years. Although the number of very large farms has increased in recent years, that trend does not involve nearly as large a portion of our agricultural land as does the increasing number of acres in the family-sized farm.

Changes in average size of farms by counties from 1930 to 1940 indicate widely varying conditions within the state. In general, the greatest percentage increase in size of farms occurs in the central one-third of the state and in the river bottom areas, or in what may be termed the heavy corn-producing areas of the state. This analysis shows changes in size of farm operating units but does not attempt to give information concerning the number of people obtaining a living from the farms nor the conditions of tenure under which the farms are operated.

H. C. M. CASE and W. D. BUDDEMEIER

STATUS AND TRENDS IN TRANSPORTATION OF ILLINOIS GRAIN

Shipments by Water

Shipments of Grain on the Illinois Waterway. The use of the Illinois Waterway for shipping grain did not increase greatly in 1940. The above statement is based on the receipts at Chicago plus the quantities handled by the Federal Barge Lines (exclusive of those sent from ports not located on the Illinois Waterway). This method of calculation omits south-bound shipments by private carriers. These may be increasing; and, if so, the figures from year to year are not strictly comparable. However, these figures apparently present a general picture of the extent and character of the movement.

The quantities of the various grains for the last three years were:

<i>Grain</i>	1938 (bushels)	1939 (bushels)	1940 (bushels)
Corn.....	16 058 000	15 662 800	17 195 300
Wheat.....	1 161 000	1 152 700	1 690 100
Oats.....	603 000	986 900	74 800
Soybeans.....	420 000	1 167 000	720 900
Rye.....	72 000	31 000	.....
Barley.....	.....	16 000	.....
Total.....	18 314 000	19 016 400	19 681 100

Increases in the volume of corn and wheat moving in this way but decreases in the quantities of oats and soybeans are indicated. In addition to the quantities given above, about 1,100,000 bushels of wheat from

Kansas City and small quantities of wheat from St. Louis and soybeans from New Orleans were delivered to Chicago by the Federal Barge Lines by way of the Illinois Waterway. During 1940 the facilities for handling this grain showed little or no change.

Destinations. The quantity shipped to Chicago from points on the Illinois Waterway in 1940 increased to 93 percent of the total compared with 84 percent in 1939. The quantity shipped to New Orleans decreased about 85 percent, reflecting the absence of corn exports in 1940. Shipments to St. Louis and New Madrid, Missouri, were also reduced, but shipments to Memphis were increased. South-bound shipments went more directly into southern consuming areas. Although figures regarding origins are not



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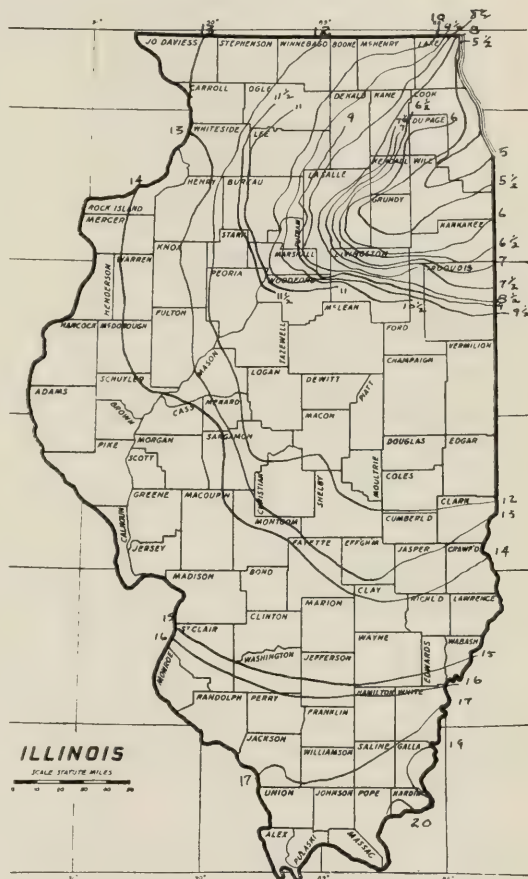
FIG. 1.—RAIL FREIGHT RATES ON GRAIN TO
CHICAGO, CENTS PER 100 POUNDS, BASED
ON PUBLISHED TARIFFS, LATE 1940

available, the bulk of this grain originated between LaSalle and Morris.

Factors Involved in This Traffic. The increasing movement of grain—principally corn—by barge to Chicago reflects the fact that the combined costs of moving grain by truck, river elevator, and barge are lower

for a considerable distance back from the Waterway than the costs of moving it by elevator and railroad. This region includes a great deal of excellent corn-producing land from which much of the corn that is raised is sold. The proposal to cancel the rail reshipping rates on ex-barge grain at Chicago has not been finally acted upon by the Interstate Commerce Commission.¹ Even if these rates are canceled, the large movement of grain from Chicago by lake will maintain a market for barge grain. The total quantity of grain shipped from Chicago by lake is substantially larger than is that received by barge; for corn in 1940, the receipts by barge were 16.3 million bushels, and shipments by lake were 45.8 million bushels.

Of the total corn received at Chicago in 1940, 93.1 million bushels, or about 17.5 percent, came by barge. Probably most of this corn would have gone to Chicago in any event because the principal supply areas for barge grain lie within the Chicago supply area. To the extent, however, that the river outlet increases the net price to the farmer whose grain moves by that route, livestock production in this area may be discouraged and a



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FIG. 2.—SPECIAL RAIL FREIGHT RATES ON CORN FROM
NORTHEASTERN ILLINOIS TO CHICAGO, CENTS
PER 100 POUNDS, BASED ON PUBLISHED
TARIFFS, LATE 1940 [BALANCE OF THE
STATE, REGULAR GRAIN RATES]

¹*Illinois Farm Economics*, June 1940, p. 356.

larger percentage of the corn marketed. If this is the case, Chicago may not draw as much corn from other areas as formerly.

Shipments of Grain from Illinois Points by the Mississippi River. Grain was shipped via the Federal Barge Lines from six points in Illinois on the Mississippi River. Although the quantities are smaller than those on the Illinois River, the total increased to 1,644,000 bushels in 1940 compared with 1,242,000 in 1939. About three-fourths of this amount consisted of corn. St. Louis and Memphis were the principal outlets; New Orleans was also of importance; New Madrid, Missouri, and Davenport, Iowa, were of lesser importance. Shipments by this carrier from Iowa points totaled 2,282,000 bushels—principally corn. Apparently points on the Mississippi River are more important sources of supply for the southern trade in corn than are points on the Illinois River. Very likely the growth of this area along the Mississippi River between Quincy and Rock Island as a source of supply for the southern corn trade is reducing the shipments from eastern and central Illinois into the South.

One effect of the growth of river transportation of corn is to siphon the grain out of the bottomland areas along the rivers and to raise the price of corn to livestock feeders in adjoining upland areas. The long-run effect may be to reduce the comparative advantage of feeding livestock in certain areas which formerly were able to buy this bottomland corn at a relatively lower price than they can at present. This situation will make the feeding of livestock in such areas less attractive.

Shipments by Truck

Chicago. According to figures furnished by the Chicago Board of Trade, the following quantities of grain were received at Chicago by truck in 1938 to 1940:

<i>Grain</i>	<i>1938</i> (bushels)	<i>1939</i> (bushels)	<i>1940</i> (bushels)
Corn.....	2 627 000	5 005 000	4 943 000
Wheat.....	481 000	410 000	388 000
Soybeans.....	181 000	336 000	233 000
Oats.....	65 000	122 000	278 000
Rye.....	19 000	8 000	7 000
Barley.....	1 000	4 000	12 000
Total.....	3 374 000	5 885 000	5 871 000

After the volume increased sevenfold between 1937 and 1938 and nearly doubled again in 1939, it stabilized at about the 1939 level in 1940. Less corn, wheat, and soybeans and somewhat more oats were received in this way. Certain limiting factors apparently are operating in this development.

St. Louis. The Merchants' Exchange of St. Louis reported the following quantities of grain received by "wagon and truck" at St. Louis and East St. Louis in 1939 and 1940:

<i>Grain</i>	<i>1939</i> (bushels)	<i>1940</i> (bushels)
Corn.....	2 800 000	2 348 000
Wheat.....	2 260 000	1 486 000
Oats.....	25 000	50 900
Rye.....	1 000	1 000
Soybeans (not reported).....	.....	.....
Total.....	5 087 000	3 885 900

Thus the truck receipts at this market were less in 1940 than in the previous year, reflecting a lack of exports which provided an outlet for grain assembled at St. Louis by truck and reshipped by river barge.

Trucking to Feeding Areas. Early in 1940 there was a considerable trade in corn into the southern states on account of their poor 1939 corn crops. Large quantities of grain were trucked out south of the line of the Baltimore and Ohio Railroad, through Tuscola, Decatur, and Springfield, and along the Big Four and Chicago and Eastern Illinois Railroads in eastern Illinois. Competition in such areas often forced the local areas to pay farmers a price equal to "track bids" for sales through their usual railroad outlets. Later in 1940, truckers, chiefly from Indiana, took large quantities of corn and oats out of this same general area because the 1940 corn crop was poor and hog production was expanding in that state.

These types of movements will always develop under present transportation conditions to fill local deficit requirements. The greater flexibility of trucking margins for hauling the smaller loads apparently permits the truck operators to pay enough more for the grain to overcome some of the commonly noted disadvantages in selling to them, such as risk in connection with payment, sales in smaller lots, etc.

Shipments by Rail

Maps of Railroad Rates. Figures 1 to 4 show grain freight rate maps for Illinois. They are based on published railroad tariffs in effect late in 1940. Changes are being made in these tariffs from time to time, particularly in the Chicago area. The maps should be used only as representation of a generalized picture; the tariffs should be examined for rates from any point.

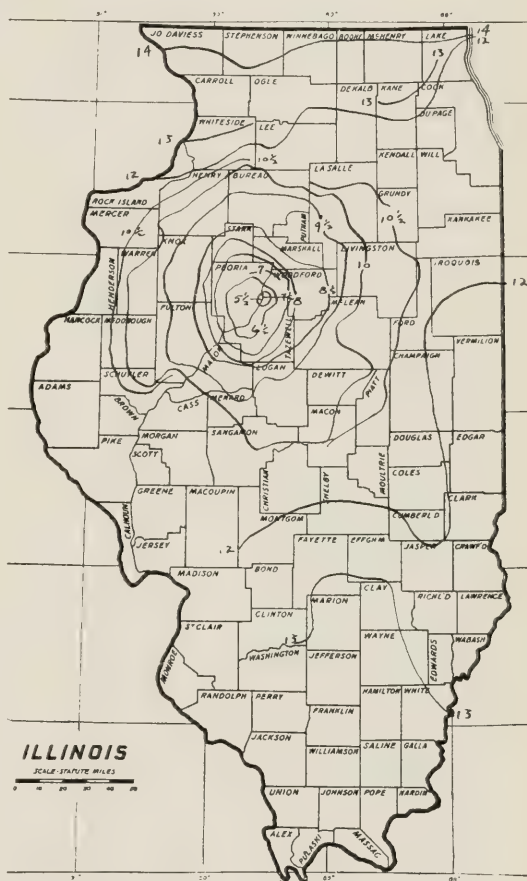
Regular Grain Rates to Chicago, Figure 1. A characteristic feature of the rate structure to Chicago is the large area in central and eastern Illinois from which the Chicago rate is 12 cents per 100 pounds. From

progressively increase. From the area along the Mississippi River where considerable grain moves by barge to St. Louis and more southern points, the rate to St. Louis ranges from 12 to 16 cents per 100 pounds. In southeastern Illinois the rates range from 13 to 17 cents.

Rates to Peoria. Figure 4. Rates into Peoria form a series of concentric circles around this market.

General Comments.

The rates to these various markets are not set up independently of each other. They all tend to be a part of a general rate structure that is based on through-rates into consuming areas. In eastern and central Illinois, the most important of such through-rates is the 38-cent New York rate, which represents the through-rate from point of origin to points in the East taking New York rates. From much of the 12-cent zone shown in Figure 1, the New York rate is 38 cents per 100 pounds. When grain is shipped by way of Chicago, the 12-cent rate becomes a "proportional rate," or the proportion of the through-rate to New York collected by the carrier hauling the grain to Chicago. The reshipping rate from Chicago on such grain is 26 cents per 100 pounds, or the balance of the through-rate.



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FIG. 4.—RAIL FREIGHT RATES ON GRAIN TO
PEORIA, CENTS PER 100 POUNDS, BASED ON
PUBLISHED TARIFFS, LATE 1940

L. J. NORTON

CONTOUR FARMING BOOSTS YIELDS AND MAINTAINS SOIL RESOURCES

Curves not only are the latest style of farming but also are here to stay. This statement is based on the experiences of farmers who have adopted contour farming on rolling and undulating land. Farm account records for 1940 on 285 farms in the Soil Conservation Project Areas in McLean, Madison, and Stephenson counties and the Shiloh-O'Fallon District in St. Clair county reveal that farming on the contour (including strip cropping, contour farming with terraces, contour farming with buffer strips, or contour farming with the same crop on an entire field) reduces and often prevents soil and water losses and generally results in higher crop yields. Crop yield data were secured on the 285 farms for all the crops grown on the contour and on the usual field system.

In a comparison of yields of crops grown on the contour with those not grown on the contour, the productive capacity of the land varies between the different farms as well as on each individual farm. Soil type, slope, degree of erosion, and previous land use and land treatment create these differences in the productive capacity of the various fields and farms. The farmers who are progressive enough to farm their rolling land on the contour probably have followed other recommended practices and soil treatments that contribute to higher crop yields, such as using limestone, growing legumes, following good rotations, etc. Nevertheless, generally speaking, the land on which the crops are grown on the contour is more rolling, is more severely eroded, and possesses lower inherent productivity than the land on which the crops are grown under the usual field arrangement.

Because allowances could not be made for the differences between farms, farmers, and farming practices, no comparison is presented of crop yields between farms with crops on the contour and farms with the same crops not on the contour. The following comparison of yields is restricted to those farms on which the same crop was grown both on the contour and not on the contour. Thus, the size of the sample is greatly restricted because many of the farms that had crops on the contour did not have the same crops grown under the old field arrangement. For example, 65 of the 285 farms grew corn on the contour, but only 47 had corn both on the contour and not on the contour; 29 had oats on the contour, but only 11 had oats under both systems; 18 had wheat on the contour, but only 13 had wheat under both systems; 12 had barley, 10 had soybeans, 19 had corn silage, 31 had alfalfa hay, and 11 had soybean hay, all on the contour, but none had these same crops grown under the old field system. Therefore, the conclusion can be drawn that a number of farmers have recognized the advantages of contour cultivation on land

TABLE 1.—AVERAGE PER ACRE YIELDS, ON THE CONTOUR AND NOT ON THE CONTOUR, ON THE SAME FARMS, 1940

Item	McLean county		Madison county		St. Clair county		Stephenson county	
	On contour	Not on contour	On contour	Not on contour	On contour	Not on contour	On contour	Not on contour
Corn:								
Number of farms.....	24	24	7	7	4	4	12	12
Total acres.....	668	942	55	86	30	60	170	159
Yield, bu.....	46.4	46.1	55.6	53.5	61.3	49.8	75.6	61.6
Oats:								
Number of farms.....	6	6	(*)	(*)	(*)	(*)	5	5
Total acres.....	132	150	....	....	....	....	70	104
Yield, bu.....	46.2	42.1	....	....	....	....	58.2	42.2
Wheat:								
Number of farms.....	(*)	(*)	13	13	(*)	(*)	(*)	(*)
Total acres.....	....	....	148	295	....	....	....	....
Yield, bu.....	....	....	27.8	24.4	....	....	....	....

*No comparison available.

subject to soil and water erosion losses and hence have put certain crops on the contour.

Crop Yields on Contour and Not on Contour on the Same Farms.

A logical assumption is that the land devoted to contour cultivation is more rolling and more badly eroded than the land on the same farm not farmed on the contour. An examination of the soil conservation survey maps on the 71 farms with the same crops both on the contour and not on the contour shows this situation to be true. However, in every area where comparisons are available, the average yields were higher for the crops grown on the contour than for the same crops not grown on the contour (Table 1). Although comparisons similar to those in Table 1 are not available for soybeans, barley, corn silage, soybean hay, and alfalfa hay, the yields of these crops averaged higher on the farms where they were grown on the contour than on those farms in the same area where they were not grown on the contour.

The facts that only a small number of records are available and that only one year's data (1940) are used limit the extent to which these data can be interpreted to indicate the amount of the increase in yields that may result from contour farming. The number of farm records for some of the crops is so small that, when measured by the probable error of the means, the crop yields on the contour and not on the contour do not show a significant difference. Nevertheless, the evidence tends to verify our common-sense conclusion that contour farming is likely to result in higher yields than will "up-and-down-hill" farming.

When crop yields on the contour are compared with yields of the

same crops not on the contour, they will naturally vary from year to year. Rainfall in 1940 averaged from 8 to 15 inches below normal for the growing season in most parts of Illinois. Contour farming and other conservation practices resulted in preventing a runoff of most of the rain that did fall during the growing season and thus aided in boosting crop yields. However, in some areas, such as the Soil Conservation Project Area in McLean county, rainfall was so scarce during the critical growing season that yield differences resulting from conservation practices were not large. This situation is in contrast with the results for 1939 (as presented in the August, 1940, issue of *Illinois Farm Economics*) when rainfall was more nearly normal and substantial crop yield increases resulted from contour farming.

Farmers' Opinions on Contour Cultivation. In the LeRoy area (McLean county), a survey was taken of the farmers who grew crops on the contour in 1940 in an attempt to get their opinions regarding growing crops on the contour. In reply to the question "Did contour cultivation affect your crop yields, and if so, how?" 77 percent of the farmers reported that it resulted in an increase in crop yields; 5 percent reported that it decreased their yields; and 18 percent reported that it did not change their yields.

They were asked to estimate the amount of the change in corn yields as a result of contour cultivation on the same fields. The average answer showed an increase of 4.8 bushels of corn per acre. This amount was considerably higher than the increases noted in Table 1 for McLean county; however, this estimated increase of 4.8 bushels represents a comparison of contour cultivation with cultivation not on the contour on the same land, and the comparison in Table 1 is between fields cultivated on the contour and those not cultivated on the contour on the same farms.

Eighty-two percent of the farmers reported that weeds were not a problem and that they were able to keep their corn drilled on the contour free of weeds. On half of these farms, furrow openers were used to plant corn, and they greatly facilitated the job of cultivating the corn and controlling the weeds.

Although the above three paragraphs represent farmers' opinions and are therefore not based on scientifically accurate data, the farmers' observations agree substantially with farm account record data.

Summary and Conclusions. In the above comparisons cultivation on the contour for the several crops resulted in higher yields than did that not on the contour. This was true when all the account-keeping farms were included in the comparison and when a comparison was made

of yields for the same crops grown on the contour and not grown on the contour on the same farms (Table 1).

The soils on the contoured fields were, generally speaking, not as productive as the soils on the fields not farmed on the contour, particularly on the farms that had the same crops both on the contour and not on the contour.

In a study of farmers' opinions, the results showed that the majority of the farmers felt contour cultivation resulted in an increase in crop yields. The results of cultivating on the contour show the same general trend in 1940 as in 1939, when a smaller sample was secured. The farm account record data show that cash farm operating expenses are not changed noticeably by farming on the contour.

The available evidence to date points out that contour farming on undulating and rolling land is a sound conservation practice. It can be performed at no apparent increase in cash farm operating expenses, and it results in boosting crop yields and maintaining soil and water resources.

E. L. SAUER and J. C. ATHERTON

RECENT RELATIONSHIPS BETWEEN THE PRICES OF SOYBEANS AND SOYBEAN PRODUCTS

Over the last 7 or 8 years the spread between the prices of soybeans and soybean products has shown a steady and substantial decline (Fig. 1). This decline has probably been the result of several factors, including increased efficiency in the processing industry as a result of improved equipment and possibly some reduction in selling costs. Increased competition as a result of considerable expansion in processing capacity may also have contributed to the decreasing margin. This competition would be especially effective in years like the present when the processing capacity is in excess of the quantity of beans available for processing.

Reduced Processing and Marketing Costs. Regardless of the causes of the decline in the spread between the prices of soybeans and soybean products, the farmer has benefited from this development. The prices of the products are determined very largely by the demand for the various protein concentrates and edible oils and the supply of soybeans, cottonseed, lard, and numerous other products. Thus the processors have little to say concerning the prices they receive. With a given price for the products, any reduction in the processors' margin directly benefits the soybean producers.

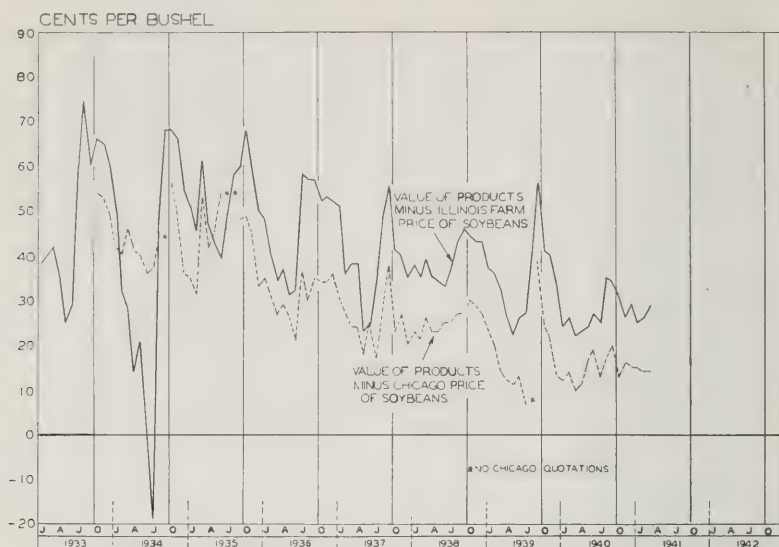


FIG. 1.—THE SPREAD BETWEEN THE VALUE OF SOYBEAN PRODUCTS AND THE CHICAGO AND ILLINOIS FARM PRICES OF SOYBEANS, 1933-1941

When prices of soybean meal at Chicago and prices of oil at mid-western mills are used, the spread between the Chicago prices of No. 2 yellow soybeans and soybean products average 20.2 cents for the period 1937-38 to 1939-40 inclusive, 16.0 cents for 1939-40, and 14.5 cents for the first 6 months of the current crop year. The spread is greater between the prices of products and the Illinois farm price of soybeans because of the increased marketing costs involved in getting the beans from the farm to the mill and the inclusion of all grades of beans marketed in the determination of the Illinois farm price. In a comparison of these two prices for the same period, the spread averaged 34.5 cents for the period 1937-38 to 1939-40 inclusive, 29.5 cents for 1939-40, and 27.7 cents for the first 6 months of the current crop year.

The processing and distributing margin is so low at the present time that some processors have indicated that they cannot continue to operate on the present margins. The large processing capacity, relative to the size of the commercial bean crop this year, has doubtless brought this margin down lower than it would have been with a larger crop of beans and possibly lower than it will be during the coming year if the current high price of beans induces farmers to plant as large an acreage as they did

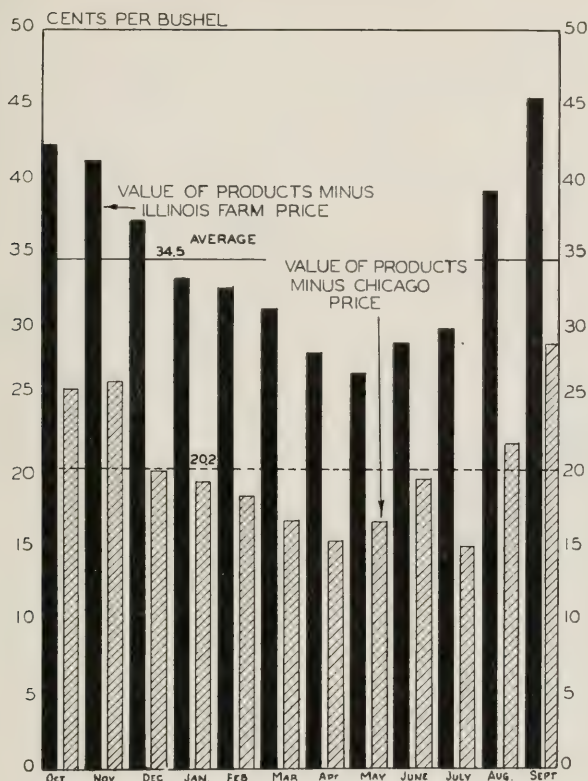


FIG. 2.—THE SEASONAL SPREAD BETWEEN VALUE OF SOYBEAN PRODUCTS AND CHICAGO AND ILLINOIS FARM PRICES OF SOYBEANS, AVERAGE, 1937-38 TO 1939-40 INCLUSIVE

last year or larger, and if yields are normal or better than normal in the commercial bean-producing areas.

Seasonal Movements of Spreads. During recent years a very definite seasonal variation has been evident in the spread between the prices of products and the prices of soybeans (Fig. 2). The processing and distributing margin is greatest in the fall and early winter months and smallest in late spring.

Illinois farm prices of soybeans are lowest in September, October, and November—during the harvest months—and highest in April, May, and June—during planting time. The Chicago price of soybeans has the same general seasonal variation as the Illinois farm price, except for the rise during April, May, and June. The demand for soybeans for seed has had a tendency to hold up the price of soybeans on the farm in rela-

tion to the Chicago price and to the value of the meal and oil during these months.

Meal prices are highest in January and February but usually decline from February to May after the pasture season opens up. Soybean oil prices reach their peak in March and April and tend to decline slowly through June and more rapidly until November, when the low point is reached. Unusual developments in the demand situation may cause both the prices of soybeans and soybean products to deviate from this seasonal pattern.

The weakening of the price of the products and the strengthening of the demand for seed during early summer contributes to a rather marked seasonal variation in the spread between Chicago prices and Illinois farm prices of soybeans (Fig. 3). For the period 1937-38 to 1939-40 inclusive, this spread averaged 14.3 cents. On a seasonal basis,

the spread between Chicago prices of No. 2 yellow soybeans and Illinois farm prices of all grades of soybeans varied from 17 cents in August and December to 9.7 cents in June.

G. L. JORDAN

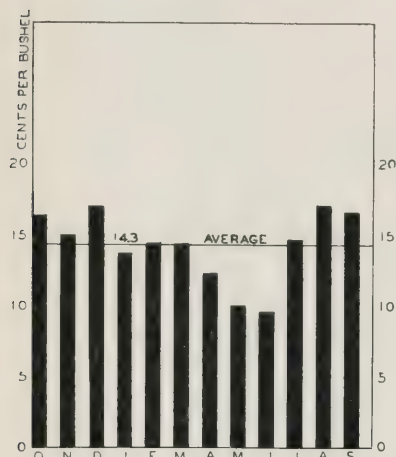


FIG. 3.—SEASONAL SPREAD BETWEEN CHICAGO PRICES AND ILLINOIS FARM PRICES OF SOYBEANS, AVERAGE, 1937-38 TO 1939-40 INCLUSIVE

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U.S. Dept. of Commerce; subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸Monthly Indexes of Non-Agricultural and National Income, Supplement, August, 1937, B.A.E.; Demand and Price Situation, or Agricultural Situation. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933 and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.



TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural income ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period . . .	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	107	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	87	68	75
1932	65	48	41	69	43	43	62	68	47	58
1933	66	51	45	71	49	51	72	63	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	77	74	87
1936	81	81	86	80	74	82	103	90	86	103
1937	86	86	96	84	80	87	103	95	102	113
1938	79	69	69	80	72	81	101	88	78	88
1939	77	65	65	78	72	81	97	93	92	108
1940	78	68	69	79	78	90	113	98	105	122
1940 Apr.	79	69	67	80	82	76	96	95	98	111
May	78	68	69	80	80	90	112	96	98	115
June	78	66	65	80	70	71	89	97	100	121
July	78	66	67	79	71	72	90	98	98	121
Aug.	77	66	69	79	71	80	101	99	106	121
Sept.	78	66	72	79	76	84	106	100	112	125
Oct.	79	66	72	79	80	98	124	100	116	129
Nov.	80	68	73	79	80	101	128	102	116	132
Dec.	80	70	74	79	86	105	131	104	122	138
1941 Jan.	80	72	78	80	86	90	112	104	121	139
Feb.	81	71	76	80	84	88	110	106	127	141
Mar.	82	72	76	80	89 ¹¹	...	...	106 ¹¹	131	143
Apr.	83 ¹¹	74 ¹¹	82 ¹¹	80	...	...	...	...	...	139

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			April 1940	Current months		
	1924-29	1939	1940		February	March	April
Corn, bu.	\$.81	\$.43	\$.56	\$.54	\$.54	\$.56	\$.61
Oats, bu. . . . .	.42	.28	.32	.38	.33	.34	.36
Wheat, bu.	1.30	.67	.81	.97	.76	.79	.83
Barley, bu. . . . .	.66	.41	.46	.48	.48	.48	.50
Soybeans, bu.	1.94	.74	.82	.97	.83	.89	1.08
Hogs, cwt.	9.97	6.56	5.54	4.95	7.50	7.40	8.30
Beef cattle, cwt.	8.57	8.18	8.84	8.20	9.90	9.60	9.90
Lambs, cwt.	12.22	8.18	8.52	8.90	9.20	9.40	10.50
Milk cows, head	78.00	63.00	65.00	65.00	73.00	72.00	74.00
Veal calves, cwt.	11.27	9.15	9.63	9.50	11.40	10.50	10.50
Sheep, cwt.	6.52	3.44	3.44	3.70	4.20	4.70	4.95
Butterfat, lb. . . . .	.42	.23	.27	.26	.28	.29	.33
Milk, cwt.	2.32	1.59	1.67	1.55	1.75	1.70	1.75
Eggs, doz. . . . .	.30	.16	.17	.13	.14	.15	.19
Chickens, lb. . . . .	.21	.13	.13	.13	.14	.14	.16
Wool, lb. . . . .	.36	.25	.30	.28	.33	.33	.35
Apples, bu.	1.59	1.07	1.14	1.25	1.20	1.25	1.20
Hay, ton	13.88	6.05	6.68	7.00	8.20	8.00	8.30
Potatoes, bu.	1.39	.80	.83	.90	.75	.75	.81

¹²For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture · University of Illinois · Department of Agricultural Economics

G. L. Jordan, Editor

June, 1941

Number 73

THE PRICE SITUATION

An inflation of commodity prices is now underway. More effective means of regulation than Mr. Henderson's Office of Price Administration and Civilian Supply has thus far taken will be required to cut short the rise. Appropriate action by other branches of the government will also be necessary.

The weekly course of 2 wholesale price indexes is shown by Figure 1. Both indexes are compiled by the Bureau of Labor Statistics, one being the index of prices of 28 basic commodities and the other being the all commodity index (converted to August, 1939 = 100).

The index of basic commodity prices has risen rapidly in recent months. At the beginning of the year it stood at approximately 120 percent of the August, 1939, level, but by mid-May it had risen to nearly 144. During the latter part of May the index changed very little, but some further advance took place during early June. On June 6, the index was 144.4 percent of that in August, 1939.

Up to the end of May the all commodity index had advanced only slightly. It is relatively slow moving because it includes the prices of all sorts of manufactured articles, such as automobiles, farm machinery, and other things whose prices are substantially fixed over considerable periods of time and hence are not free to reflect quickly the effects of changing supply and demand conditions. The 28 basic commodities, on the other hand, are far more sensitive to such changes.

In the next few months the all commodity index will probably show a marked rise. The rise, however, will not be as rapid as that which has taken place in the more sensitive commodities—unless the latter should show a sudden further spurt. Of the 28 basic commodities, 11 are imported, and 17 are produced domestically. In the past four months prices of the imported products have risen much more rapidly than have prices of those domestically produced. There have been special reasons for the rapid rise of the imported goods. While there has been no shortage of such goods at the sources of supply, our import requirements have risen in the face of a decline in available shipping tonnage. Ocean freight rates have risen, making the cost of importation higher, and many shipping

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

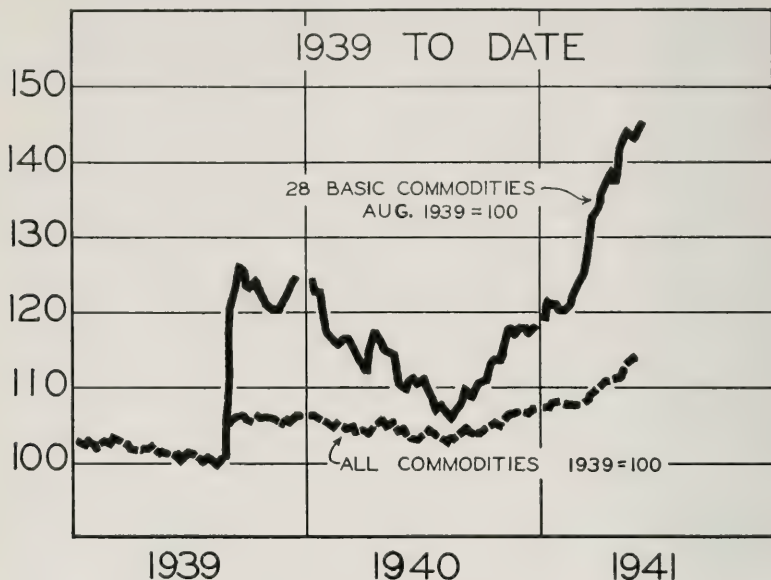


FIG. 1.—WHOLESALE PRICES, WEEKLY, 1939 TO DATE

preferences and priorities which restrict the available supply of some of the goods in this country are in effect. The 11 imported commodities have risen from a level of about 120 at the beginning of the year to about 150 in early June. The 17 domestic commodities which were at 118 at the first of the year had risen only to 140 in early June. The all commodity index is composed primarily of domestic goods and will be influenced relatively little by the shipping difficulties. Its movements will depend largely upon the domestic costs of production and the adequacy of goods available for domestic consumption to fill the expanded demand brought about by increased consumer purchasing power.

Monthly farm product prices at wholesale during the years 1914 to 1921 and the corresponding prices from January 1939 to date are shown by Figure 2. Two principal differences are apparent in a comparison of the course of prices during the past two years with that of prices in the 1914-1916 period. In the first place, the level of farm product prices has been a little lower in the recent period than in the earlier one. In the second place, the index rose markedly immediately after the outbreak of war in 1939; in 1914, farm product prices averaged lower in the last quarter of the year than just before the outbreak of the war. The failure of the farm products index to move during 1939 in about the same way as

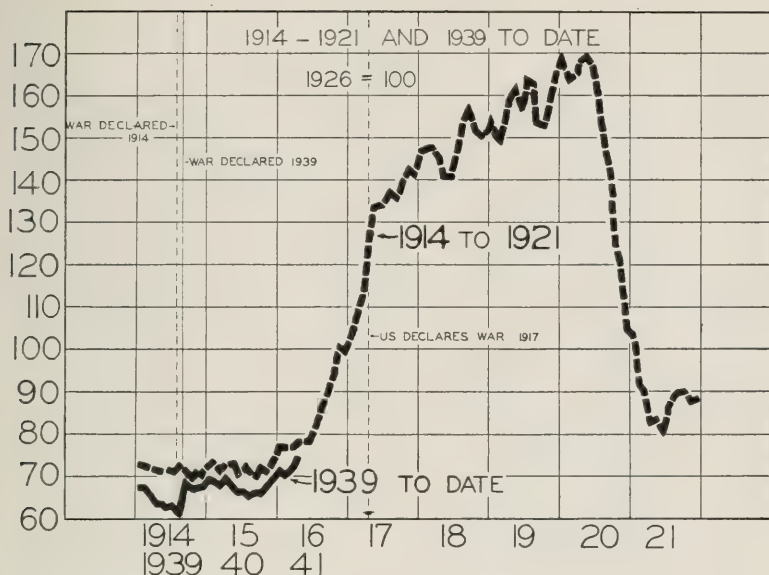


FIG. 2.—WHOLESALE PRICES OF FARM PRODUCTS BY MONTHS, 1914-1921, AND 1939 TO DATE (1926 = 100)

it did in 1914 was largely due to the difference in the movement of cotton prices. Prior to World War I a large proportion of our cotton crop was used by central European countries; and when war broke out, cotton prices slumped drastically. An index of prices of farm products other than cotton would show a rise from July to August, 1914, somewhat similar to that which took place from August to September, 1939.

Index numbers of the wholesale prices of foods are shown by Figure 3. This chart is similar to the ones appearing on pages 258 and 341 of the August, 1939, and April, 1940, issues of *Illinois Farm Economics*. This chart, however, shows monthly figures over a longer period of time. Since the data are monthly rather than weekly, the Bureau of Labor Statistics index can be used for both periods. The similarity of the movement of food prices in the two periods is striking in spite of the marked differences in the character and development of the two wars.

Figure 4 shows the course of wholesale prices of all commodities other than farm products and foods for the two war periods. Two notable things are immediately apparent from this chart compared with the two previous ones. First, during 1939, prices of these industrial products were considerably higher than they were in 1914. Second, this index has not risen markedly thus far during the present war. The failure of the index

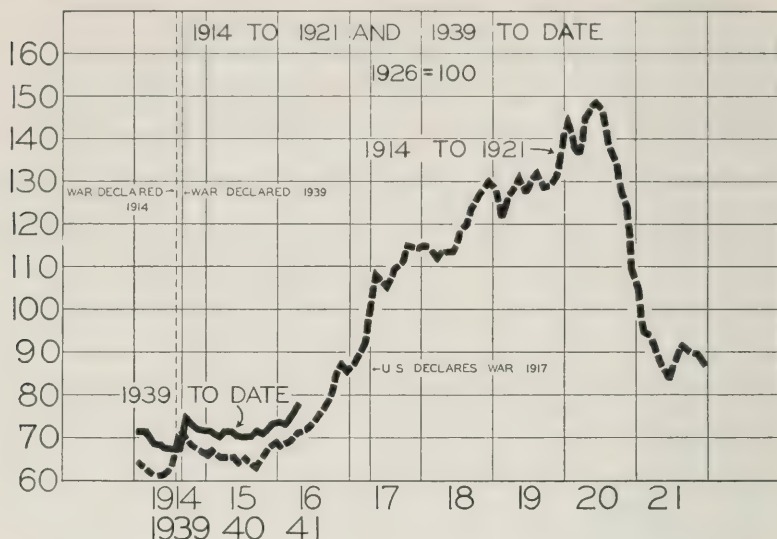


FIG. 3.—WHOLESALE PRICES OF FOODS BY MONTHS, 1914-1921, AND 1939 TO DATE (1926 = 100)

of prices of industrial products to rise much in the past few months may be attributed in part to the fact that the index includes a larger number of commodities and a larger proportion of "inflexibly" priced commodities in recent years than it did in 1916. Other, and perhaps more important, factors are involved, however. Thus, it is probably significant that industry was rather seriously depressed in 1939, with a large amount of idle capacity. Furthermore, the danger of inflation is now generally recognized, and such price control measures as have already been instituted have had some effect even though the prices of basic commodities have shown marked increases.

One of the things to be noted from Figures 3, 4, and 5 is that the rise of commodity prices was checked within a few months after the United States entered the war. Although prices increased some after the middle of 1917, the rate of advance was much less rapid than in the months just before. This less rapid advance was due in part to price control measures which were put into effect shortly after our entrance into the war and in part to the strong demands made upon people to buy Liberty Bonds. Bond purchases restricted the amount of money available to spend for other goods and thus tended to halt the bidding up of prices of consumer goods. The recent declaration of an unlimited emergency may mark the beginning of a period similar to that which started when

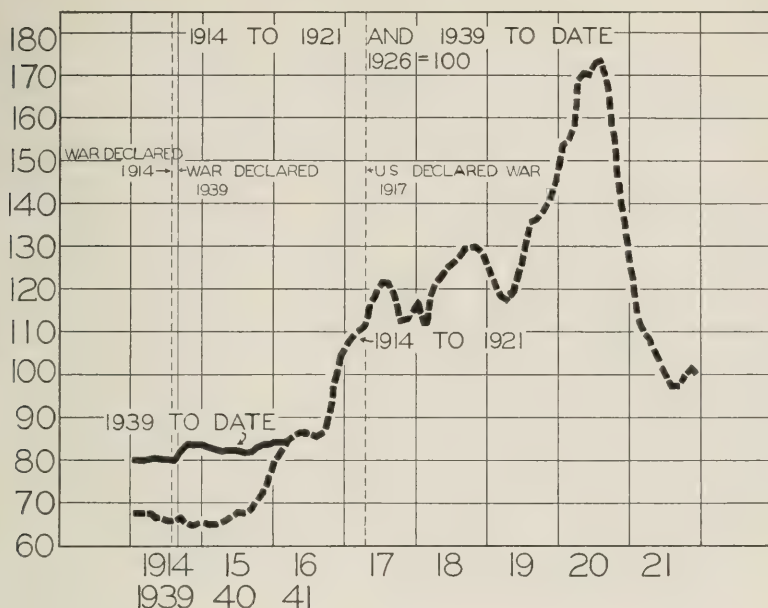


FIG. 4.—WHOLESALE PRICES OF COMMODITIES OTHER THAN FARM PRODUCTS AND FOODS, BY MONTHS, 1914-1921, AND 1939 TO DATE (1926 = 100)

the United States declared war in April, 1917. Some price control measures are underway, and Defense Bonds have already been offered to the public. In this connection, it is perhaps significant that the rise in prices of basic commodities was checked about the middle of May. If this and other indications foreshadow a prompt check to the tendency toward inflation, we are fortunate to have the check occur before prices have risen as much as they did before the United States entered the World War in 1917.

Inflation has many serious consequences. To farmers, the most serious effects come after the period of inflation is over. The price disparities which prevailed after 1920 were largely the result of the war-time and postwar inflation of 1916 to 1919. Inflation brings with it maladjustments which tend to result in a later fall of prices such as occurred in 1920 and 1921. Deflation results in price disparities which are especially likely to be detrimental to farmers, but it affects other groups through unemployment and general depression.

Defense expenditures are currently at a rate of a little more than 1 billion dollars monthly, or about 13 billion dollars per year. In coming months the rate of expenditure will no doubt be greatly increased. Some

statements from Washington have indicated a need for increasing defense production to 35 or 50 billion dollars yearly. National income payments during the month of May appear to have been equal to the 1929 average and indicate a total production of goods and services at a rate of over 80 billion dollars yearly. The total production of goods and services will

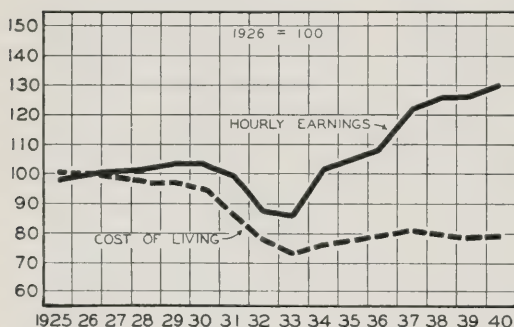


FIG. 5.—HOURLY EARNINGS IN 25 MANUFACTURING INDUSTRIES, AND THE COST OF LIVING (1926 = 100)

probably not be increased to a level of more than 90 billion dollars, when measured in terms of present price-levels. Consequently, expenditures of 35 to 50 billion dollars yearly at present price-levels would mean that about half of our total productive capacity would be devoted to defense purposes. Such a scale of defense production is bound to involve a marked

reduction in goods available for civilian use, and continued inflation is inevitable unless the purchasing power of workers is largely diverted to taxes and the purchase of government bonds. (For a more detailed discussion of these problems see the articles on inflation in *Illinois Farm Economics*, November and December, 1939, and October, 1940.)

Bank loans have continued to rise rapidly, loans of reporting member banks reaching 10,226 million dollars at the close of May. This amount was 103.1 percent of the 1936-1938 average (see chart on page 409 of the October, 1940, issue of *Illinois Farm Economics*).

One of the most vital questions upon which the extent of inflation will depend is that of wage rates. Wage rates have increased in many industries during the past six months, and workers are currently demanding further increases. In March (the latest month for which figures are available), the Bureau of Labor Statistics reported average hourly earnings of wage earners in all manufacturing industries as 69.7 cents compared with 66.5 cents a year earlier. As long as increasing industrial output has meant fuller utilization of plant capacity, many manufacturers have been able to increase wage rates without correspondingly increasing unit costs and prices of their products. However, further increases in wage rates are likely to increase unit costs and prices in many cases. Then, too, the curtailing of production in some of the consumer goods

industries (automobiles, for example) due to priorities and other controls connected with the defense program is likely to result in higher unit costs and higher prices even if wage rates should not increase further.

Recent reports indicate that railway workers are demanding increases of 41 percent in their wage rates. It is hard to see how such a request can be granted without materially increasing freight rates. Any increase in freight rates on farm products would, of course, tend to lower prices at country points wherever such country-point prices are not maintained by government action. In some cases there would also be some tendency for higher freight rates to raise prices at central markets.

Altogether, unless the policy of the federal government with regard to industrial wage rates is changed markedly, wage rate increases in the coming months will probably tend to contribute to the process of inflation. In view of this fact, it is worth noting that industrial wage rates on an hourly basis are much higher now than in 1929.

Hourly earnings in 25 manufacturing industries averaged 76.9 cents in March, 1941, as compared with the yearly averages of 59.0 cents in 1929 and 73.9 cents in 1940 (according to the figures of the National Industrial Conference Board). Figure 5 shows graphically the course of these wage rates compared with the Bureau of Labor Statistics index of the cost of living. For comparability, both series have been converted to indexes with a 1926 base.

Due largely to shorter hours, weekly and monthly earnings are not as high now relative to the predepression years, as are hourly earnings. Indeed, monthly earnings per worker did not rise to the 1929 level until the end of 1940. When the lower cost of living is taken into consideration, however, the "real" monthly income of factory workers—that is, the goods and services which their money will buy—has been higher for several years than it was in 1929.

Figure 6 shows index numbers of real earnings of factory workers

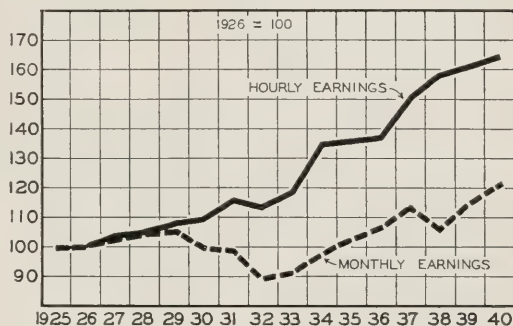


FIG. 6.—REAL EARNINGS^a OF FACTORY WORKERS
(1926 = 100)

^aEarnings in money adjusted for changes in the cost of living.

both on an hourly basis and on a monthly basis. The original hourly earnings data are from the National Industrial Conference Board series. The original monthly earnings are derived from the Bureau of Labor Statistics data concerning factory employment and payrolls. Both series are adjusted for changes in the cost of living as indicated by the Bureau of Labor Statistics index of the cost of goods purchased by wage earners and lower-salaried workers in 33 large cities of the United States.

E. J. WORKING

EARNED INVESTMENT VALUE OF ILLINOIS CORN-BELT FARMS

During the years 1918 to 1920 many Illinois corn-belt farms sold at figures ranging from \$300 to \$600 per acre. Loans of as much as \$200 and even more were made per acre on combined first and second mortgages. When the agricultural depression of the 1920's and the general depression of the early 1930's came, many of the borrowers lost their farms to the mortgage holders because of their utter inability to meet necessary operating and living expenses and to pay taxes on the land and interest on the loans. Many others lost their farms when the loans came due because of their inability to refinance their entire indebtedness. Many family estates that had been accumulated over a period of 2-4 generations were lost, and the inheritors of the estates became tenant farmers or hired men, quit farming entirely, or went on the government's relief rolls.

Evidences show that the sad drama of the land boom and subsequent foreclosures and losses of family estates of the past 25 years may be re-enacted. Stories of incidents like the following are going around.

Two neighboring farmers recently bid against each other for the purchase of a certain farm until one bid it off at nearly \$300 per acre. In another case a farmer who owned 240 acres of good land paid \$200 per acre for an adjoining 240 acres and mortgaged the entire 480 acres for a loan of \$48,000 with which to finance the purchase of the additional land. The latter purchaser will find himself in a difficult position if another depression comes before a large part of his loan is paid off. If he is a superior farm operator, if his family living is not on an extravagant basis, and if he keeps his health, he will probably survive a depression. However, if he should die or become incapacitated and if his family is forced to operate the farm with hired labor or with tenants, the loss of the farm during a depression period is almost inevitable.

The rent from even the better Illinois farm land will not support a loan of \$100 per acre, pay the real estate taxes, and supply the minimum

TABLE 1.—THE EARNED INVESTMENT VALUE PER ACRE OF ILLINOIS
CORN-BELT LAND FOR THE 25 YEARS 1916-1940

Based on farm account records kept on Woodford county rented farms

Year	Landlord's net farm income per acre	Income from landlord's operating capital ^a	Landlord's net income per acre from real estate	Earned investment value per acre of real estate ^b	Earned investment value per acre adjusted to average land of county ^c
1916.....	\$ 7.40	\$.22	\$ 7.18	\$180	\$145
1917.....	11.72	.15	11.57	289	233
1918.....	13.79	.50	13.29	332	267
1919 ^d	12.54	.54	12.00	300	242
1920.....	4.53	.60	3.93	98	79
1921.....	.75	.30	.45	11	9
1922.....	4.04	.22	3.82	96	77
1923.....	4.77	.27	4.50	112	90
1924.....	10.08	.29	9.79	245	197
1925.....	6.28	.51	5.77	144	116
1926.....	4.36	.33	4.03	101	81
1927.....	5.97	.22	5.75	144	116
1928.....	7.12	.19	6.93	173	139
1929.....	7.92	.36	7.56	189	152
1930.....	3.70	.31	3.39	85	68
1931.....	1.83	.19	1.64	41	33
1932.....	.72	.16	.56	14	11
1933.....	4.47	.13	4.34	108	87
1934.....	5.11	.21	4.90	122	98
1935.....	4.97	.26	4.71	118	95
1936.....	9.45	.26	9.19	230	185
1937.....	9.16	.27	8.89	222	179
1938.....	5.86	.40	5.46	137	110
1939.....	9.77	.35	9.42	236	190
1940.....	7.29	.50	6.79	170	137
25-year average.....	\$ 6.54	\$.31	\$ 6.23	\$156	\$125

^aThis figure is 5 percent of the value of the landlord's operating capital per acre. ^bThis figure is the landlord's net income per acre from real estate capitalized at 4 percent. ^cThis figure is obtained by taking 80.5 percent of the earned investment value per acre of real estate on record-keeping farms (see text for further explanation). ^dThe landlord's share of the net farm income for 1919 is only an estimate because the records of the division of income between tenant and landlord were incomplete that year.

needed to keep up the improvements during a depression. If the family owning the farm is dependent on the farm income for support, foreclosure of the mortgage will come earlier and more certainly.

What is farm land worth? Considered as an investment, on what acre-value will Illinois farm land pay a net return of 4 percent over the life of the ordinary loan? Studies of farm account records kept since 1916 in Woodford county and since 1926 throughout the state give answers to these questions.

Rented Land. The studies in Woodford county show that the average land under ordinary tenant management has had a 25-year investment value of about \$125 per acre for the land and buildings, includ-

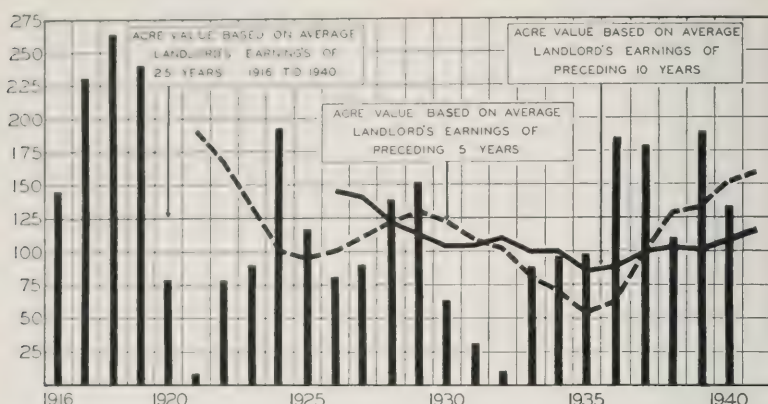


FIG. 1.—INVESTMENT VALUE PER ACRE OF THE AVERAGE WOODFORD COUNTY FARM LAND BASED ON LANDLORD'S NET EARNINGS AS SHOWN BY ACCOUNT RECORDS OF RENTED FARMS KEPT DURING THE PERIOD OF 1916-1940

ing the residence, and a 15-year postwar investment value of about \$113 per acre (see Table 1 and Fig. 1). The landlord's net income per acre from the land and buildings was capitalized at 4 percent to determine the investment value. This method gave an average acre-value of \$332 for 16 rented record-keeping farms in 1918, \$11 for 28 farms in 1921, \$14 for 15 farms in 1932, \$236 for 19 farms in 1939, and an average of \$156 for the 25 years 1916-1940.

Record-keeping tenant farmers are known to be superior to average tenant farmers. On the farms included in this study, the average corn yield was 50.3 bushels per acre for the 25 years 1916-1940. According to the Cooperative Crop Reporting Service, the Woodford county average for the same years was 42.7 bushels. This fact indicates that the record-keeping farms were either located on better-than-average land, had better-than-average management, or had a combination of both.

Studies of landlords' long-time incomes from ordinary corn-belt land, where 35 to 50 percent of the land is kept in corn, show that, within the ordinary ranges of 40 to 50 bushels, the investment value for each bushel-increase in the average acre-yield of corn increases about \$4.00. On this basis, the average Woodford county farm that produced a 25-year acre-yield of 7.6 bushels of corn less than the record-keeping farms had an investment value of \$30.40 less per acre. Subtracting this sum from the earned investment value of \$155.75 for the record-keeping farms leaves \$125.35 as the estimated average 25-year earned investment value of the average Woodford county land.

When an average acre-value of Woodford county land for each year was calculated on the basis of the landlord's average net income for the 5 preceding years, it varied from \$193 in 1921 to \$90 in 1925, \$59 in 1935, and \$160 in 1941. When the acre-value was based on the average net

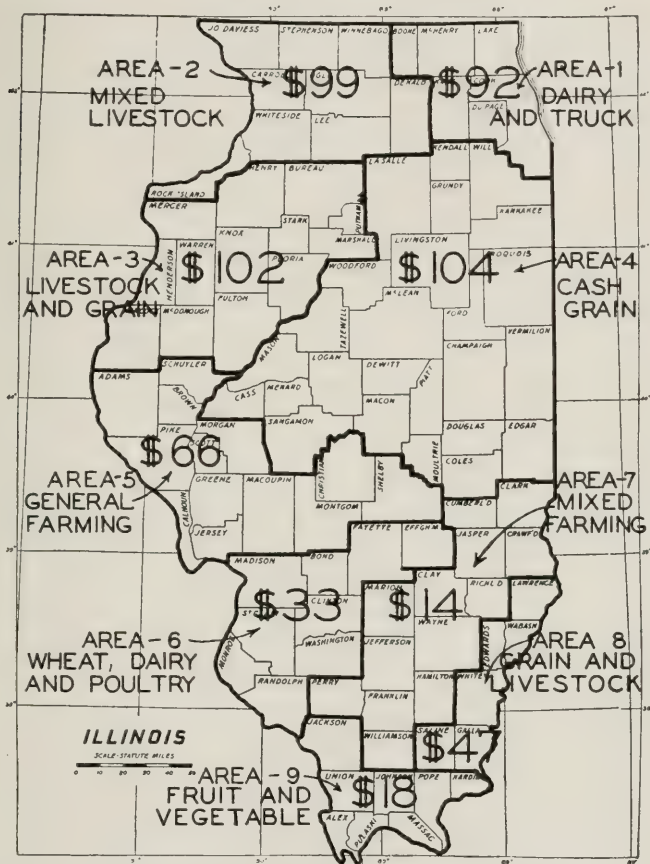


FIG. 2.—FIFTEEN-YEAR AVERAGE EARNED VALUE PER ACRE OF ILLINOIS FARM LAND IN THE NINE TYPE-OF-FARMING AREAS, BASED ON NET CASH EARNINGS PER ACRE ON 25,000 RECORD-KEEPING FARMS

income for the 10 preceding years, it varied from \$146 in 1926 to \$88 in 1936 and up to \$113 in 1941.

Many amortized loans run for 25 years or longer. If history repeats itself, the average income producing value of corn-belt land during the life of the ordinary loan will be only about \$125 per acre. Any greater value placed on ordinary land must be based on home value, on superior

TABLE 2.—EARNED VALUE OF LAND AND BUILDINGS BASED ON NET CASH EARNINGS PER ACRE BY TYPE-OF-FARMING AREAS AND BY YEARS

Year	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8
1926.....	\$147	\$169	\$146	\$118	\$119	\$44	\$45	\$89
1927.....	147	110	119	96	35	43	50	75
1928.....	100	71	99	166	60	5	-27	46
1929.....	162	147	103	158	104	61	13	57
1930.....	117	124	120	120	91	27	-7	36
1931.....	69	60	43	33	13	2	-18	-5
1932.....	54	10	19	9	3	-12	-9	-9
1933.....	55	42	67	45	43	18	14	14
1934.....	62	94	104	121	83	37	28	55
1935.....	35	123	96	95	66	47	42	72
1936.....	121	152	152	173	79	48	37	71
1937.....	112	109	92	99	70	45	7	63
1938.....	59	86	103	103	68	33	10	33
1939.....	30	68	94	107	60	45	7	61
1940.....	114	122	113	121	59	55	15	40
15-year average earned value.....	\$ 92	\$ 99	\$102	\$104	\$ 66	\$33	\$14	\$47

productive capacity of the soil, on superior management of the operator, or on a speculative value.¹

Owner-Operated Land. During the 25 years 1916 to 1940, the Woodford county record-keeping farms that were operated on the owner-operator basis produced an average net income of \$10.69 per acre for the land and buildings. If the acre-income of \$10.69 is capitalized at 5 percent in order to cover interest and amortization charges, an acre-value of \$214 results; if it is capitalized at 6 percent, an acre-value of \$178 results. Many people have erroneously considered such a calculation to indicate that the average record-keeping farm has an acre-value of about \$200 per acre. However, part of the net income of \$10.69 per acre was for management and income from livestock enterprises which required the use of only a small portion of the land. If an owner-operator had \$200 an acre invested in his farm and if he should die, the farm would be worth only what it would bring to his family as an investment in the hands of a good tenant.

The earned value of land varies greatly with its productivity, access to markets, and other factors. This variation in earned value is apparent in any area and among different parts of the state. The 25,000 farm financial records collected by the Department of Agricultural Economics over the past 15 years form a good basis for calculating the earned value of land in the different type-of-farming areas.

¹The long time earned investment value of \$125 per acre is based on records of landlord's earnings during the 25 years 1916-1940, including the wartime years of 1917 to 1919 as well as the depression years of 1920-1922 and 1930-1933.

Earned Values by Type-of-Farming Areas. Table 2 shows the annual earned value of land and buildings and a 15-year average value based on the capitalization of the net cash income less the operator's and family labor at 5 percent in each of eight of the nine type-of-farming areas of the state.¹ During the earlier years of the study not enough records were available in Area 9 to make a satisfactory calculation of the value of land in that area. Figure 2 shows the 15-year average earned value for each of the nine type-of-farming areas. The earned acre-value of \$18 for the average land in Area 9 is an estimate based on records kept during the past few years. The greater earned value of land in Area 8 than in adjoining areas is due to the large amount of good bottomland along the Wabash River and its tributaries.

The earned value of land in the different type-of-farming areas was fully discussed in an article entitled "Land Values in Relation to Farm Earnings" by H. C. M. Case in the November, 1939, issue of *Illinois Farm Economics*.

Studies of the sale prices of land indicate that land prices are greatly influenced by prices of farm products during the few preceding years. This situation is unfortunate and leads to many foreclosures. In buying land during prosperous times, a person may wisely avoid borrowing to pay more than the long-time income from the land plus a reasonable home value will justify. When land prices go much above such a figure, a person may wisely continue as a tenant or the owner of a small farm, save his earnings, and be ready to buy land during the period of low land prices, such as follow periods of inflated values. M. L. MOSHER

THE EFFECT OF CORN PRODUCTION ON THE PRICE AND TOTAL VALUE OF THE CROP

During the past 50 years the price of corn, the basic farm product of Illinois, has followed the trend in the price-level of other raw materials (Fig. 1). Apparently much of the variation in the price of corn has been caused by the same forces that have brought about changes in the general commodity price-level.

Factors Affecting the Price of Corn. Although the price-level materially influences the price of corn, other factors are important. The most

¹The reader should not be confused by the use of different methods of calculating earned values of land in the two studies reported. In one method, the landlord's net income was capitalized at 4 percent; in the other, the total farm net income was capitalized at 5 percent after only the operator's labor was deducted. The difference of 1 percent may be considered as income for the owner-operator's management. The two methods gave nearly the same values for corresponding years and areas.

important of these are: (1) changes in the supply (largely variations in annual crops) and (2) changes in the demand for feeding as measured by changes in livestock numbers (mostly hogs). Feeding demand is affected not only by changes in livestock numbers, but also by increased efficiency in the use of corn over a period of years as a result of an increased use of protein supplements and better quality roughages. Of these factors, variation in the annual production of corn is usually the most important reason why the price of corn does not follow the general price-level more closely.

Relation of Annual Production of Corn to the Price. In order to determine the effect of the supply of corn on its price, one must first allow for changes in the price-level. Figure 2 shows the December farm price of corn adjusted for changes in the price-level and the crop of corn expressed as a percentage of the average of the five previous crops in each year from 1890 to 1940. By comparing the adjusted price and corn production, the inverse relationship can be seen. With large crops, the adjusted price has been low; with small crops, it has been high. But changes in the corn crops do not explain the large variation in corn prices shown

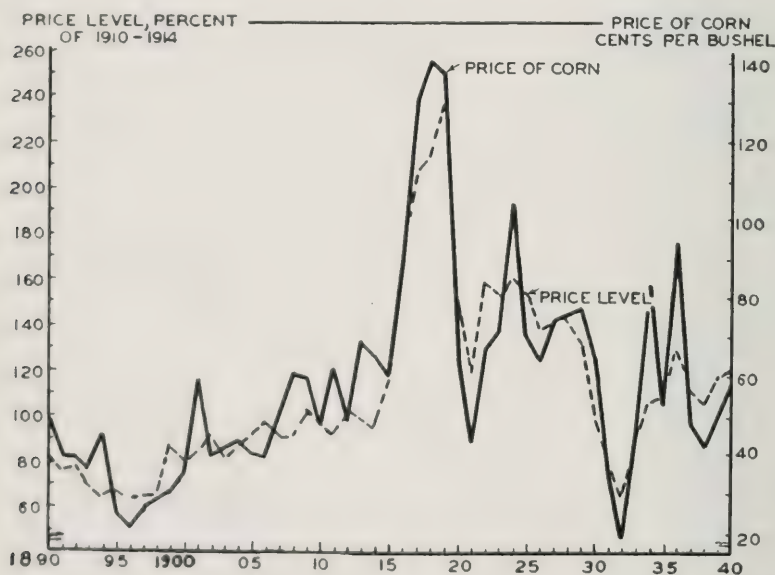


FIG. 1. AVERAGE DECEMBER UNITED STATES FARM PRICE OF CORN AND THE PRICE-LEVEL OF BASIC COMMODITIES, 1890-1940 (1910-1914 = 100)

Corn prices follow the price-level but fluctuate around it because of changes in factors that affect the price of corn but not the price-level. Size of the crop is the most important of these.

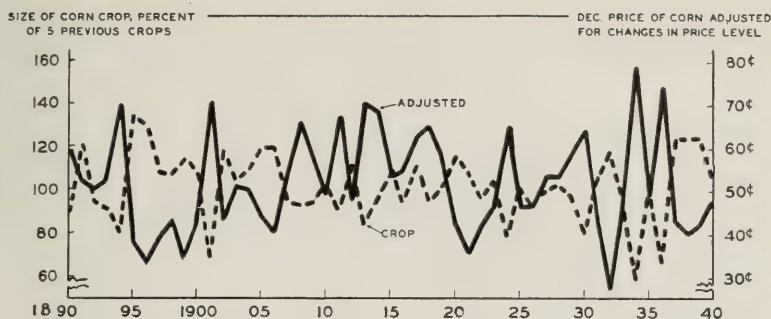


FIG. 2.—SIZE OF THE CORN CROP COMPARED WITH THE DECEMBER UNITED STATES FARM PRICE OF CORN, ADJUSTED FOR CHANGES IN PRICE-LEVEL, 1890-1940

Most of the variations in the price of corn that are left after allowing for changes in price-level are related to changes in the size of crop (supply). When the production of corn has been low, as in 1934 and 1936, the price has been high in relation to the price-level.

TABLE 1.—U. S. PRODUCTION AND DECEMBER PRICES OF CORN IN SMALL CROP YEARS, 1894, 1901, 1934, AND 1936^a

Year	Total U. S. corn production	Production, percent of normal ^b	December U. S. farm price per bushel	Adjusted price per bushel
	(million bushels)			
1894.....	1 615	80	\$.45	\$.71
1901.....	1 716	68	.60	.71
1934.....	1 461	58	.85	.79
1936.....	1 507	65	.96	.74

^aSource of data: Production of corn—*Agricultural Statistics*, 1940, U. S. Dept. of Agr., pp. 45, 46; price of corn—December, U. S. farm prices as published by the Crop Reporting Board, U. S. Dept. of Agr.; price-level, 1890-1934, an index of 30 basic commodities, *Gold and Prices*, G. F. Warren and F. A. Pearson, pp. 19-21, 1935-40, an index of 40 basic commodities, *General Motors-Cornell Index*. ^bAn average of the crops for the 5 previous years is taken as normal.

in Figure 1 (\$1.41 per bushel in 1918 to \$0.19 in 1932). A large part of such variation was caused by the same factors that cause the up-and-down movements in the whole commodity price structure.

Variations in the production of corn, however, do explain a large part of the variations in the price of corn after it is adjusted for changes in the price-level. During the 50 years shown in Figure 2, the highest adjusted prices came in 1894, 1901, 1934, and 1936 (Table 1).

In these four years were harvested the shortest corn crops since 1890. Although the actual price in 1936 was more than twice that in 1894 and more than 50 percent higher than that in 1901, the adjusted prices—that is, actual prices adjusted for price-level—varied only 8 cents all

TABLE 2.—PRICE AND TOTAL VALUE OF LARGE AND SMALL CORN CROPS, 1901-1940^a

Size of crop	Average size of crop	December farm price		Index of price-level ^c	Total value of corn crop at December prices	
		Actual ^b	Adjusted for price-level		Actual	Adjusted for price-level
	(million bu.)	(cents per bu.)	(cents per bu.)	(1910-14 = 100)	(millions)	(millions)
20 largest crops...	2 807	61	47	128	\$1 717	\$1 304
20 smallest crops...	2 309	69	59	116	1 561	1 337

^aSource of data: See Table 1. ^bAn unweighted average of December prices. Therefore, the average crop multiplied by the average price will not check with the total value of the crop given in this table. ^cAn average of December indices of the price of basic commodities, not weighted by size of corn crop.

four years. Differences between the actual and the adjusted price of corn in these years were due not to changes in the supply of corn but principally to changes in the price-level. The prices varied more than 100 percent even though these four crops were approximately the same size.

Influence of Production on the Total Value of the Corn Crop.

During periods when carryovers are normal, changes in the production of corn are largely offset by changes in the price—that is, higher prices accompany smaller crops and lower prices accompany larger ones. But the value of a crop depends not only on the price but also on the quantity for sale. For some farm commodities, a large national crop is more valuable than a small one; for others, a small crop is more valuable. The supply-price relationship for corn is such that, with the same general price-level situation, a small crop usually brings slightly more money than a large one.¹

This statement is substantiated by research done by other workers in the field of Agricultural Economics. F. A. Pearson, W. I. Myers, and K. R. Bennett, Department of Agricultural Economics, New York State College of Agriculture, *Farm Economics*, May, 1939, Number 113, page 2,766. In this article covering the years 1875-1913, the relation between the United States production of corn and the purchasing power of the United States December farm price was expressed as follows:

Corn production, percent of normal	Farm price, percent of normal	Farm value, percent of normal
70	149	104
80	128	102
90	113	102
100	100	100
110	90	99
120	82	98
130	75	98
140	69	97

Also see Henry Schultz, *The Theory and Measurement of Demand*, University of Chicago Press, 1938, page 275.

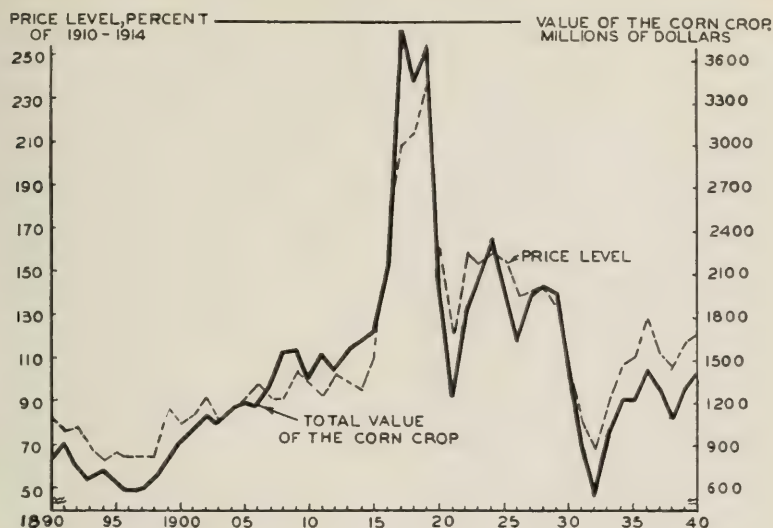


FIG. 3.—TOTAL VALUE OF THE UNITED STATES CORN CROP AT DECEMBER FARM PRICES, COMPARED WITH THE PRICE-LEVEL OF BASIC COMMODITIES, 1890-1940

Changes in the total value of the corn crop have been closely related to changes in the price-level of basic commodities.

During the past 40 years the United States farm price of corn has averaged 61 cents for the 20 years with the largest crops, and 69 cents for the 20 years with the smallest ones (Table 2). When these figures are adjusted for changes in the price-level of basic commodities (1910-14 = 100), the price averaged 47 cents during the large crop years and 59 cents during the small crop years. Because of the higher general price-level prevailing during the former period, the actual dollar value of the crop averaged 10 percent higher than during the latter period. If a correction is made for price-level changes, the *purchasing power* of the crop in terms of 1910-14 dollars amounted to \$1,304 million for the large crop years and \$1,337 million, or 2½ percent more, for the small crop years. This confirms the conclusion made in the previous paragraph that with the same general price-level situation a small crop usually brings slightly more money than a large one.

The total value of the corn crop varies closely with changes in the price-level (Fig. 3). The two series show a very close relationship during the period from 1900 to 1932 when the total acreage in corn varied but little. The total value of the corn crop is much more closely related to the price-level than to the size of the corn crop.

Price and Value of Corn Under Present Conditions. During the

period since 1937, the corn loan has held the price somewhat higher than would have occurred on the basis of the normal supply-price relationship. This slowed up the feeding of corn to livestock and increased the demand for protein supplements. These two adjustments, together with favorable growing conditions, resulted in a large carryover of corn. This corn must eventually be consumed through feeding to livestock, principally hogs. The announcement of the Secretary of Agriculture that the Department would maintain the price of hogs at \$9.00 through purchases of hog products (seasonal movements and other price relationships taken into consideration) and that the price of corn would be maintained at around the loan level by management of government-owned stocks of corn will help to convert corn into food which can be used at this time. The high level of demand for animal foodstuffs—the highest in years—provides an excellent opportunity to get rid of surplus corn. With the passage of the recent parity legislation, a higher price than \$9.00 for hogs must be maintained if the expansion of livestock numbers necessary to use up surplus corn is to take place.

Based on past relationships, an increase in corn production caused by the recent easing of the rules concerning acreage allotments will have little effect on the total value of the corn crop. A decline in the total value of the crop is not likely to occur unless the general price-level declines. Instead of declining, the price-level has been rising during the past few months and will probably continue to rise at least for the duration of the war.

E. M. HUGHES

Footnotes for the last page:

^{1,2}The first source is for annual data; the second is for current data from which tables may be brought to date.

³Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; subsequent monthly issues. ⁴Same as footnote 1. ⁵Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁶Agricultural Situation, Bureau of Agricultural Economics, U. S. D. A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6986. ⁷Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁸Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁹Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ¹⁰Monthly Indexes of Non-Agricultural and National Income, Supplement, August, 1937, B.A.E.; Demand and Price Situation, of Agricultural Situation. ¹¹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issue, unadjusted for seasonal variation. ¹²Federal Reserve Bulletin of Federal Reserve Board, September, 1933 and subsequent issues; Survey of Current Business, seasonally adjusted. ¹³Preliminary estimate. ¹⁴Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.



TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural income ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm products ¹	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All farm products ²	Farm products ³				In money ⁶	In purchasing power ⁷			
Base period	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	107	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	87	68	75
1932	65	48	41	69	43	43	62	68	47	58
1933	66	51	45	71	49	51	72	63	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	77	74	87
1936	84	81	86	80	74	82	103	90	86	103
1937	86	86	96	84	80	87	103	95	102	113
1938	79	69	69	80	72	81	101	88	78	88
1939	77	65	65	78	72	81	97	93	92	108
1940	78	68	69	79	78	90	113	98	105	122
1940 May	78	68	69	80	80	90	112	96	98	115
June	78	66	65	80	70	71	89	97	100	121
July	78	66	67	79	71	72	90	98	98	121
Aug.	77	66	69	79	71	80	101	99	106	121
Sept.	78	66	72	79	76	84	106	100	112	125
Oct.	79	66	72	79	80	98	124	100	116	129
Nov.	80	68	73	79	80	101	128	102	116	132
Dec.	80	70	74	79	86	105	131	104	122	138
1941 Jan.	80	72	78	80	86	90	112	104	121	139
Feb.	81	71	76	80	84	88	110	106	127	141
Mar.	82	72	76	80	88	94	118	106 ¹¹	131	143
Apr.	83	74	82	80	93 ¹¹	...	...	...	134 ¹¹	140
May.....	85	76	84 ¹¹	81	...	...	...	...	...	149 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			May 1940	Current months		
	1924-29	1930	1940		March	April	May
Corn, bu.	\$.81	\$.43	\$.56	\$.60	\$.56	\$.61	\$.66
Oats, bu.	.42	.28	.32	.35	.34	.36	.34
Wheat, bu.	1.30	.67	.81	.87	.79	.83	.88
Barley, bu.	.66	.41	.46	.47	.48	.50	.50
Soybeans, bu.	1.94	.74	.82	.92	.89	1.08	1.20
Hops, cwt.	9.97	6.56	5.54	5.50	7.40	8.30	8.40
Red clover, cwt.	8.57	8.18	8.84	8.40	9.60	9.90	9.60
Lard, lb.	12.22	8.18	8.52	8.90	9.40	10.50	10.00
Meat, dressed, lb.	78.00	63.00	65.00	65.00	72.00	74.00	75.00
Veal, dressed, cwt.	11.27	9.15	9.63	9.70	10.50	10.50	10.50
Swine, cwt.	6.52	3.44	3.44	3.60	4.70	4.95	4.90
Butterfat, lb.	.42	.23	.27	.20	.29	.33	.34
Milk, cwt.	2.32	1.59	1.67	1.50	1.70	1.75	1.85
Eggs, doz.	.30	.16	.17	.14	.15	.19	.19
Chicken, lb.	.21	.13	.13	.14	.14	.16	.16
Wool, lb.	.36	.25	.30	.30	.33	.35	.40
Apples, bu.	1.50	1.07	1.14	1.38	1.25	1.20	1.20
Pears, bu.	13.88	6.05	6.68	7.7	8.00	8.30	8.30
Potatoes, bu.	1.39	.80	.83	.9	.75	.80	.75

¹²—Only a portion of data in tables see previous page.

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ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

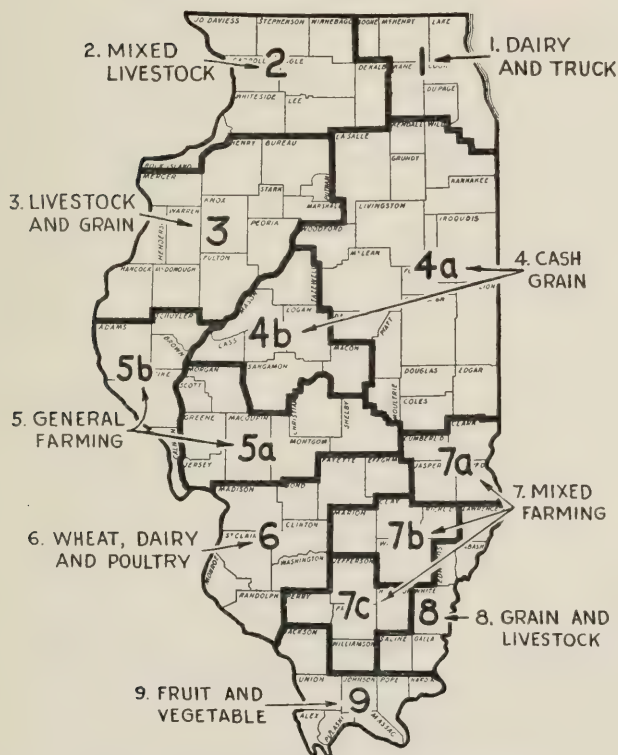
College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

July, 1941

Number 74

Summary of Annual Farm Business Reports on 2,738 Illinois Farms For the Year 1940



THE NINE MAJOR TYPE-OF-FARMING
AREAS IN ILLINOIS

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

FOREWORD

This issue of *Illinois Farm Economics* is devoted to an analysis of 2,738 farm records which were kept throughout Illinois during 1940. It also includes some comparisons of earnings during that same year with those of previous years.

Illinois farmers have cooperated with the University of Illinois in keeping financial and production records of their farms for more than 25 years. These records have become more useful as more and more farmers have kept them and as they have been continued over a longer period of years. The greater value from these records is that of helping farmers who keep them and use them to study their own business. These records enable one to find what each part of the farm business contributes to the income and also help to analyze the expenses. As the records are kept over a period of years, they provide a basis for making changes which will improve the farm earnings and enable each individual to compare his farming operations with those of others farming under similar conditions.

Another value of the records is that of studying farm earnings from year to year on the same or similar farms as a means of showing the financial condition of farmers in relation to other industries. A comparison of the prices for things farmers buy and sell helps to accomplish this purpose. However, farming is so complex with the sources of income and the character of expenses varying widely on farms of different types that farm records provide the most satisfactory basis for such comparisons.

A third value to be gained from the records is that of showing how the investments, incomes, expenses, earnings, yields, and sources of income vary in different parts of the state due to such factors as soil differences, size of farms, type of farming, climatic conditions, and available markets. The records also show the influence of variations within type-of-farming areas in quality of soil, size of farm, and type of organization on crop yields, capital investments, and earnings.

In addition to the values set forth above, the records have been used in getting equitable adjustments in freight rates and tax assessments and in showing the annual changes in farm earnings for a large group of better-than-average farmers.

H. C. M. CASE

SUMMARY OF FARM BUSINESS REPORTS ON 2,738
FARMS IN ILLINOIS FOR 1940

P. E. JOHNSTON, J. B. CUNNINGHAM, AND M. L. MOSHER

The average net cash income an acre for Illinois accounting farms was higher in 1940 than in any other year since 1929 with the exception of 1936. The average net of \$6.82 an acre for 1940 compared with \$7.40 for 1936, \$7.78 for 1929, and an average of \$5.30 for the years 1934, 1935, 1937, 1938, and 1939, a group of years when earnings were practically the same (Fig. 1).

The average income an acre for Illinois accounting farms was as follows for the successive years 1926-1940:

1926.....	\$7.30	1931.....	\$2.69	1936.....	\$7.40
1927.....	5.74	1932.....	1.47	1937.....	5.33
1928.....	6.22	1933.....	3.00	1938.....	5.25
1929.....	7.78	1934.....	5.40	1939.....	5.40
1930.....	6.22	1935.....	5.14	1940.....	6.82

The net cash income an acre was computed by subtracting the value of unpaid labor from the cash balance for the year and by dividing that difference by the number of acres on the farms. In order to calculate the state averages, farming-type-area averages were weighted by the acres of land in the farms (census) in each farming-type area.

These returns do not include the inventory changes or the money value of food, fuel, and other items of living, all of which are secured

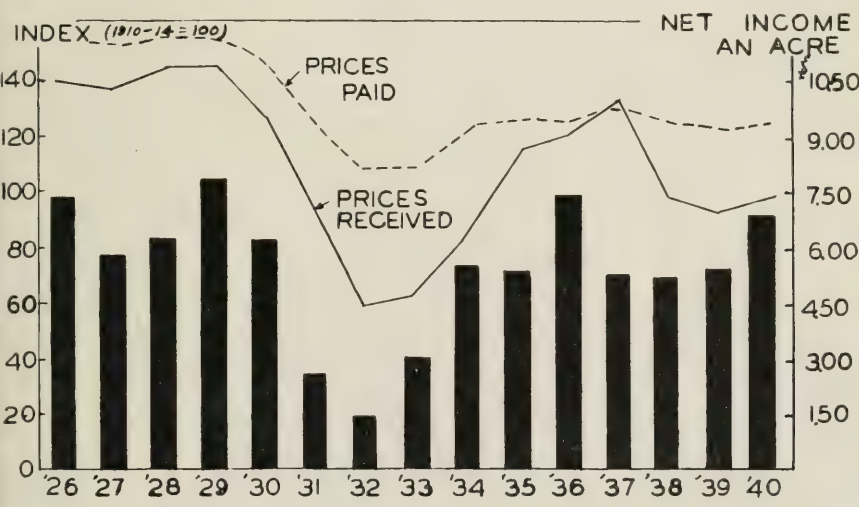


FIG. 1.—AVERAGE NET CASH INCOME AN ACRE (UNPAID LABOR DEDUCTED) ON ILLINOIS ACCOUNTING FARMS, PRICES PAID BY FARMERS IN THE UNITED STATES, AND PRICES RECEIVED BY ILLINOIS FARMERS, 1926-1940

from the farm. The net cash income an acre is one of the best measures for comparing incomes of groups of farms over a period of years or for contrasting the level of income for different type-of-farming areas because it is not influenced by changes in the inventory of land. During any period of years, earnings fluctuate more widely from year to year when inventory changes are included. On the inventory basis, earnings are lower in the low-income years and higher in the high-income years, because there are usually inventory losses when prices are declining and inventory increases when prices are rising.

The following summary is a record of incomes, expenditures, and earnings on Illinois accounting farms for 1940 and also a record of comparisons of selected items with similar records for other years. The data contained in this report represent Illinois farm conditions which are better than average because the accounting farms are larger than average, the crop yields are above average, and the farms on the whole are operated with efficiency which is greater than average. Records of this type are useful for showing variations in income from year to year and for demonstrating differences between farming-type areas. The variation in income from farm to farm within the groups is shown in Table 3.

In the farm business reports published in 1938, 1939, and 1940, and in the printed tables at the back of this report, the value of farm products used in the household was included as a source of income. In comparing the 1938, 1939, and 1940 records with those for other years, the value of farm products used in the household has been omitted because the data are not available for years prior to 1938. The average value of farm products used in the household was \$272 per farm, or \$1.19 an acre, for all accounting farms in Illinois for 1938, \$252 per farm, or \$1.09 an acre, for 1939, and \$242, or \$1.02 an acre, for 1940. The averages for the various farming-type areas are as follows:

VALUE OF FARM PRODUCTS USED IN HOUSEHOLD, 1938, 1939, AND 1940

Area	Per farm			Per acre		
	1938	1939	1940	1938	1939	1940
Area 1	\$267	\$241	\$253	\$1.43	\$1.41	\$1.41
Area 2	265	250	247	1.28	1.20	1.17
Area 3	278	260	252	1.12	1.05	1.01
Area 4	265	251	236	1.01	.94	.87
Area 5	279	256	244	1.15	.98	.96
Area 6	290	264	250	1.40	1.31	1.25
Area 7	268	254	244	1.24	1.12	.99
Area 8	252	239	211	1.24	1.10	.93
Area 9	284	229	220	1.27	1.23	.94
State average*	\$272	\$252	\$242	\$1.19	\$1.09	\$1.02

*Weighted by the number of census farms in each area.

TABLE 1.—SELECTED ITEMS OF INCOME AND EXPENSE ON ACCOUNTING FARMS IN ILLINOIS, 1934-1939^a

Item	1934	1935	1936	1937	1938	1939	1940
Acres per farm.....	223	216	227	227	232	237	242
Cash income per farm.....	\$3 692	\$4 342	\$5 374	\$5 309	\$5 285	\$5 920	\$6 334
Cash expenditures per farm..	1 865	2 605	3 034	3 424	3 421	4 001	4 094
Cash balance.....	\$1 827	\$1 737	\$2 340	\$1 885	\$1 864	\$1 919	\$2 240
Inventory increase.....	530	779	802	727	428	1 117	541
Cash balance plus inventory increase.....	\$2 357	\$2 516	\$3 142	\$2 612	\$2 292	\$3 036	\$2 781
Unpaid labor.....	670	668	740	733	698	696	691
Net farm income.....	\$1 687	\$1 848	\$2 402	\$1 879	\$1 594	\$2 340	\$2 090
Gross receipts per acre ^b	\$15.28	\$17.14	\$19.55	\$18.00	\$16.66	\$19.89	\$19.16
Total expense per acre ^c	7.81	8.68	9.06	9.86	9.95	10.26	10.47
Net receipts per acre ^b	\$ 7.47	\$ 8.46	\$10.49	\$ 8.14	\$ 6.71	\$ 9.63	\$ 8.69
Net receipts per acre (cash basis).....	\$ 5.40	\$ 5.14	\$ 7.40	\$ 5.33	\$ 5.25	\$ 5.40	\$ 6.82

^aIn this table and in succeeding tables where data are on a farm basis rather than on an acre basis, state averages were obtained by weighting area averages by the number of farms in each area.

^bGross receipts include inventory changes.

^cTotal expense includes unpaid labor.

Cash Income per Farm. The average cash income and cash expenditures per farm were larger in 1940 than in any year for which records are available (since 1926).

The average cash balance, however, was larger in 1929 and 1936 than in 1940 (Table 1).¹ When inventory changes are included, incomes were larger in both 1936 and 1939 than in 1940. A part of the larger cash income for 1940 was due to an increase in the size of farm. (The farms averaged 5 acres larger in 1940 than in 1939 and 43 acres larger in 1940 than in 1926.)

Inventory Increases. The average inventory increase of \$541 for 1940 was smaller than that for any year since 1934, with the exception of 1938, and very much less than the \$1,117 average increase for 1939. Inventory increases have occurred each year since the depression year of 1932, and these annual increases have ranged from \$428 per farm in 1938 to \$1,117 per farm in 1939. The average annual increase for the 8-year period ending in 1940 was \$672 a farm.

An inventory increase indicates that the combined value of livestock, grain, improvements, and machinery was larger at the end of the year than at the beginning. The ending inventory of each year is for the same farms as the beginning inventory, but the farms included in the averages for one year are not exactly the same as those for any other year because some old cooperators are dropped each year and new ones added.²

¹Data for the years prior to 1934 are not presented in this report.

²A high percentage of the cooperators for one year continues for the next.

TABLE 2.—CASH FARM BUSINESS EXPENDITURES ON ILLINOIS ACCOUNTING FARMS, 1934-1940

Nature of expenditures	Average per farm							Percent 1940 is of 1939
	1934	1935	1936	1937	1938	1939	1940	
Farm improvements	\$ 127	\$ 185	\$ 212	\$ 274	\$ 314	\$ 368	\$ 368	100
Machinery and equipment..	401	683	841	956	969	961	1 019	106
Feed and grain	413	488	612	656	471	634	647	102
Crop expense	144	174	205	276	148	144	152	106
Hired labor	180	236	261	306	348	371	369	99
Taxes	214	206	231	234	256	272	287	106
Livestock and miscellaneous	386	633	672	722	915	1 251	1 252	100
Total cash expenses	\$1 865	\$2 605	\$3 034	\$3 424	\$3 421	\$4 001	\$4 094	102

The series of inventory increases for a period of 8 years reflects the increase in prices for farm products, heavy investments in improvements and machinery, and an accumulation of grain and livestock following the drouth of 1934. Enough money has been spent for machinery and improvements so that the value per farm on January 1, 1940, was 69 percent larger for machinery and 16 percent larger for improvements than it was in 1934. Earnings are larger during the last 8 years if inventory changes are included than if calculations are made on a cash basis. On the other hand, inventory losses averaged \$866 a year for the 3 years 1930-1932. The cash basis more nearly reflects the ability of the farmer to pay his interest, to buy the things that the family needs, and to add something to the savings than does the method of accounting which includes inventory changes. Inventory changes must be included, however, in order to find the net position of the farm business for the year.

Cash Farm Business Expenditures. Illinois accounting farmers spent more money to run their farms in 1940 than in any year of record (since 1926) and probably established an all-time high because farms are larger now and farmers purchase a higher percentage of the materials used to operate their farms. Expenditures averaged 2 percent larger in 1940 than in 1939 and 120 percent larger in 1940 than in 1934 (Table 2). More money was spent in 1940 than in 1939 for machinery and equipment, feed and grain, crop expenses, and taxes; other expenditures were practically the same in the two years.

The following percentages indicate the expenditures per farm for 1940 compared with those for 1934: farm improvements, 290 percent; machinery and equipment, 254 percent; feed and grain, 157 percent; crop expense, 106 percent; hired labor, 205 percent; taxes, 134 percent; and livestock and miscellaneous, 324 percent. These increases reflect

TABLE 3.—VARIATIONS IN EARNINGS FROM FARM TO FARM BY FARMING-TYPE AREAS, 1940^a

Farming-type area	Level of earnings	Number of farms	Average rate earned on investment	Net earnings per farm	Labor and management earnings
	(rate earned in percent)		(percent)		(per farm)
1	Less than 5.00.....	15	2.9	\$ 632	\$ 13
	5.00 to 8.99.....	26	7.3	2 227	1 244
	9.00 or more.....	40	12.1	3 749	2 758
2	Less than 6.00.....	109	4.2	\$1 530	\$ 260
	6.00 to 8.99.....	156	7.5	2 770	1 490
	9.00 or more.....	191	11.6	3 697	2 676
3	Less than 8.00.....	313	5.4	\$2 036	\$ 649
	8.00 to 10.99.....	145	9.3	3 627	2 223
	11.00 or more.....	78	12.7	5 043	3 611
4	Less than 7.00.....	336	4.7	\$1 964	\$ 411
	7.00 to 9.99.....	188	8.3	3 576	1 955
	10.00 or more.....	58	11.7	4 740	3 276
5	Less than 7.00.....	134	4.4	\$1 160	\$ 364
	7.00 to 10.99.....	115	8.9	2 893	1 823
	11.00 or more.....	67	13.3	3 605	2 800
6	Less than 7.00.....	70	3.9	\$ 678	\$ 247
	7.00 to 10.99.....	101	9.0	1 575	1 116
	11.00 or more.....	84	13.9	2 496	2 039
7	Less than 5.00.....	39	2.2	\$ 230	\$ 89
	5.00 to 8.99.....	30	7.4	1 345	843
	9.00 or more.....	29	13.3	1 940	1 634
8	Less than 5.00.....	18	3.1	\$ 481	\$ 88
	5.00 to 10.99.....	25	8.2	1 345	982
	11.00 or more.....	14	13.8	2 656	2 112
9	Less than 3.00.....	20	.1	\$ 12	\$ -98
	3.00 to 8.99.....	19	6.0	891	553
	9.00 or more.....	16	14.4	1 731	1 539

^aFor a more detailed analysis of variation in earnings, see the 1940 reports for each area.

changes in the price-level, changes in the quantities purchased, and changes in the average size of farm.

Variations in Earnings from Farm to Farm. Earnings for the farms included in each area vary widely. Much of the farm-to-farm variation is due to the managerial ability of the operators and to the manner in which the farms are organized and operated. The records were grouped for this study into high-, medium-, and low-income farms on the basis of the rate earned on investment. The value of farm products used in the household was included as a farm receipt in this tabulation. The records for LaSalle, Livingston, McLean, Tazewell, and Woodford counties were omitted from the averages for Area 4. The wide variation in rate earned on investment, net receipts per farm, and labor and management earnings indicates the opportunities which some farmers have for improving the income from their farms because these variations

are largely due to factors over which the operator has some control (Table 3).

Influence of Price Changes on Illinois Farm Incomes

Prices of Important Farm Products. Prices of most livestock and livestock products were higher at the end of 1940 than at the beginning, but prices of all grains except corn were lower.

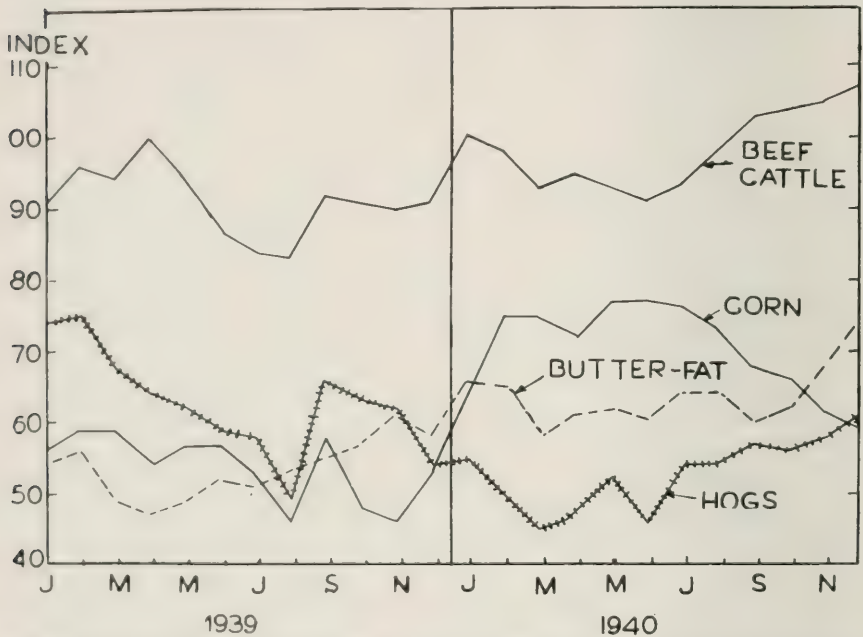


FIG. 2.- INDEXES OF THE AVERAGE MONTHLY FARM PRICES OF CORN, HOGS, BUTTERFAT, AND BEEF CATTLE, 1939 AND 1940. (1924-1929 = 100)

Although many commodities were lower in price at the end of the year than at the beginning, all the principal Illinois farm products except horses and hogs averaged higher in 1940 than in 1939. The index of all Illinois farm prices averaged 5 percent higher in 1940 than in 1939. The increases for the various groups were as follows: grains, 25 percent; dairy products, 8 percent; fruits, 6 percent; and chickens and eggs, 3 percent. Meat animals decreased 4 percent because of the lower price of hogs.

A great deal of the variation in earnings between the different types of farming in Illinois is due to the constantly shifting ratios between the prices of various livestock products and between those of livestock

products and grains. During 1940, the price of beef cattle was materially higher than that of hogs, other livestock, and livestock products. Likewise, the ratio of the price of cattle to the price of corn was much more favorable to the cattle feeder than to the hog feeder. In 1940, 9.2 bushels of corn equaled in value 100 pounds of live hog compared with an average of 15.4 bushels in 1939. During the fall breeding season, the ratio was very unfavorable to the hog producer.

Farm product	December 15 farm prices		Average yearly farm prices	
	1939	1940	1939	1940
Corn, bu.....	\$.47	\$.52	\$.43	\$.56
Wheat, bu.....	.88	.79	.67	.81
Oats, bu.....	.35	.33	.28	.32
Barley, bu.....	.44	.49	.41	.46
Soybeans, bu.....	.95	.81	.74	.83
Hay, ton.....	6.50	7.30	6.05	6.68
Horses, head.....	85.00	74.00	85.00	77.00
Hogs, cwt.....	5.10	5.80	6.56	5.54
Beef cattle, cwt.....	8.30	9.80	8.18	8.84
Lambs, cwt.....	8.20	8.80	8.18	8.52
Milk cows, head.....	65.00	68.00	63.00	65.00
Milk, cwt.....	1.80	2.00	1.59	1.68
Butterfat, lb.....	.26	.34	.23	.27
Chickens, lb.....	.11	.13	.13	.13
Eggs, doz.....	.19	.27	.16	.17

Variations in Supplies. Prices of farm products at inventory time influence farm earnings because all feed, grain, livestock, and other farm property must be valued at the beginning of the year and at the end. The influence is greatest where large stocks are on hand at inventory time. Abundant feed supplies and increasing inventories have characterized the years since the drouth year of 1936. In 1940, however, the rather spotted crop situation resulted in somewhat low inventories of feed on some farms and large feed supplies on others. For the state as a whole, the corn reserves on January 1, 1941, were the smallest since 1937, reflecting not only the smaller crop but also the smaller amount of sealing that took place under the loan program. Supplies of other feed and grain crops were larger on January 1, 1941, than in 1940. According to the Division of Agricultural Statistics at Springfield, the supplies of the four major grain crops on Illinois farms on January 1, 1940 and 1941, were as follows:

Type of grain	1940 (million bushels)	1941
Corn.....	351	280
Oats.....	57	98
Wheat.....	5	8
Soybeans.....	15	17

On accounting farms, all livestock numbers increased in 1939 over 1938. In 1940, however, only the number of milk cows, beef cows, feeder cattle, and fall pigs increased, but the number of feeder lambs, brood sows, spring pigs, and summer pigs decreased. The following data indicate the percentage increase in livestock numbers on 2,847 accounting farms during the calendar year 1940:

<i>Type of livestock</i>	<i>1940</i> (percent of increase)	<i>Type of livestock</i>	<i>1940</i> (percent of increase)
Milk cows.....	3	Brood sows.....	-2
Beef cows.....	10	Spring pigs.....	-3
Feeder cattle.....	12	Summer pigs.....	-2
Feeder lambs.....	-2	Fall pigs.....	9

The increase in the number of milk cows, beef cows, and feeder cattle was general throughout the United States. This upward swing may be expected to continue for two or three more years. The decrease in the number of brood sows, spring pigs, and summer pigs is much less than that which took place in the corn belt as a whole. Likewise, fall pigs decreased 12 percent in the United States but increased 9 percent on Illinois accounting farms.

Crop Yields in Illinois, 1940. The year 1940 was the fourth consecutive year of high crop yields in Illinois. The weighted average yield of corn, oats, wheat, and soybeans was 128 percent of the 10-year average, 1929-1938, and was within 5 points of being as high as it was in 1939, when the average yield was 133 percent.

The 1940 yields of these four crops, as expressed in percentages of the 1929-1938 averages, follow: corn, 126.8; oats, 154.9; wheat, 129.3; and soybeans, 89.2. In 1940, corn yields were higher than the average of the 10 years in each of the counties of the state except Clay, Crawford, Franklin, Hardin, Jefferson, Livingston, Marshall, Richland, and Wayne; oat yields were higher in each of the counties except Union; and wheat yields were higher in each of the counties except Calhoun and Cook. Soybean yields, on the other hand, were below the average in all the principal soybean-producing counties. The counties with the highest average yields of the various crops in 1940, as compared with those for the base period, follow: Randolph county—corn, 170 percent; Grundy county—oats, 199 percent; Alexander county and Whiteside county—wheat, 159 percent; and Macoupin county—soybeans, 126 percent.

The counties with the highest crop yields were located, for the most part, in northern and southwestern Illinois where weather conditions were particularly favorable for the small-grain crops as well as for the corn crop. On the other hand, the counties with the lowest crop yields

TABLE 4.—NET CASH INCOME AN ACRE FOR ILLINOIS ACCOUNTING FARMS BY FARMING-TYPE AREAS FOR THE PERIODS 1925-1929 AND 1930-1934 AND FOR THE YEARS 1936, 1937, 1938, 1939, AND 1940

Farming-type areas	1925-1929	1930-1934	1936	1937	1938	1939	1940
Area 1, Chicago Dairy.....	\$9.59	\$5.25	\$7.95	\$7.76	\$4.97	\$4.04	\$8.66
Area 2, Northwestern Mixed Live-stock*	7.94	4.92	9.31	7.30	6.16	5.76	8.71
Area 3, Western Livestock and Grain*	9.05	4.86	9.11	6.12	6.88	6.83	8.01
Area 4, East-Central Cash Grain*	8.91	4.46	9.88	6.26	6.69	7.08	9.02
Area 5, West-Central General Farming	6.35	3.23	4.98	4.72	4.64	4.55	4.68
Area 6, St. Louis Dairy and Wheat..	3.26	2.03	3.39	3.29	2.84	3.69	4.34
Area 7, South-Central Mixed Farming	2.21	.91	2.73	1.28	1.41	1.39	1.81
Area 8, Wabash Valley Grain and Livestock.....	4.57	1.73	4.41	4.11	2.63	4.19	3.11
State Average (weighted by acres in area).....	\$7.13	\$3.74	\$7.40	\$5.33	\$5.25	\$5.40	\$6.82

*These areas include records from the Farm Bureau Farm Management Service for 1938, 1939, and 1940.

were located in the south-central and southeastern areas of the state. Another group of counties which extended diagonally southeast from Knox county had spotted and moderately low crop yields in relation to the crop yields for the rest of the state. The variation in crop yields between counties and groups of counties as well as between communities, townships, and even individual farms was greater than usual in 1940 because of differences in rainfall and other climatic conditions.

Variations in Net Cash Income an Acre. The average net cash income an acre for Illinois accounting farms in 1940 varied from \$1.81 in Area 7 to \$9.02 in Area 4 (Table 4). Net cash incomes were higher in 1940 than in 1939 in Areas 1 to 7 inclusive and lower in Area 8. They were higher in the former areas because higher-than-average crop yields in 1939 and 1940 resulted in relatively heavy marketings of farm products in 1940 and because the prices of all the principal farm products except hogs averaged higher in 1940 than in 1939. In Area 8, cash sales were higher in 1940 than in 1939, but the higher cash sales were offset by higher cash expenses; as a result, net cash income was \$1.08 lower in this area in 1940 than in 1939.

Inventory Changes by Farming-Type Areas. The average inventory increased \$541 a farm in 1940. This amount included inventory increases for all the areas and for all the items except feed and grain in Areas 3 and 4 (Table 5).

Farmers in Areas 3 and 4, where grain is one of the principal sources of income, liquidated some of their 1938 and 1939 sealed corn and sealed less of their new crops than they did in either of the two previous years.

TABLE 5.—INVENTORY INCREASES BY FARMING-TYPE AREAS, 1940

Farming-type areas	Live-stock	Feed and grain	Machin-ery	Improve-ments	Total
Area 1, Chicago Dairy.....	\$396	\$352	\$ 43	\$ 81	\$872
Area 2, Northwestern Mixed Livestock.....	518	112	67	74	771
Area 3, Western Livestock and Grain.....	596	—82	58	88	660
Area 4, East-Central Cash Grain.....	339	—296	126	95	264
Area 5, West-Central General Farming.....	343	301	108	118	870
Area 6, St. Louis Dairy and Wheat.....	104	217	128	65	514
Area 7, South-Central Mixed Farming.....	9	137	87	151	384
Area 8, Wabash Valley Grain and Livestock.....	17	360	85	15	477
Weighted Average.....	\$305	\$ 43	\$ 96	\$ 97	\$541

These things affected grain inventory because sealed grains were carried in the inventory accounts rather than as sales.

More than half the inventory increase was for livestock, this increase reflecting the effect of abundant feed supplies and favorable feeding ratios for beef cattle. However, the inventory increase for livestock was not entirely due to an increase in the number of livestock because prices were higher at the end of the year than at the beginning for cattle, hogs, sheep, and poultry.

The increase in inventory of \$96 a farm for machinery and \$97 a farm for improvements indicates that farmers were still replacing equipment which should have been replaced during the depression period. The machinery and improvement increases were slightly smaller in 1940 than in 1939; the feed and grain item was much smaller; and the livestock item was larger.

On January 1, 1941, the average accounting farm had 2,888 bushels of corn and 797 bushels of oats on hand as contrasted with 3,423 bushels of corn and 529 bushels of oats on hand January 1, 1940 (Table 6).

TABLE 6.—BUSHELS OF CORN AND OATS IN INVENTORIES ON ACCOUNTING FARMS BY FARMING-TYPE AREAS, JANUARY 1, 1940 AND 1941

Farming-type areas	Corn		Oats	
	Jan. 1, 1940	Jan. 1, 1941	Jan. 1, 1940	Jan. 1, 1941
	(bushels)			
Area 1, Chicago Dairy.....	1 996	1 924	552	953
Area 2, Northwestern Mixed Livestock.....	3 355	2 986	821	1 228
Area 3, Western Livestock and Grain.....	4 980	4 205	709	911
Area 4, East-Central Cash Grain.....	5 788	4 583	792	1 280
Area 5, West-Central General Farming.....	2 811	2 531	341	526
Area 6, St. Louis Dairy and Wheat.....	1 180	1 061	271	363
Area 7, South-Central Mixed Farming.....	1 231	1 103	175	228
Area 8, Wabash Valley Grain and Livestock.....	1 257	1 348	153	240
Weighted Average.....	3 423	2 888	529	797

TABLE 7.—NET INCOME AN ACRE (INVENTORY BASIS) FOR ILLINOIS ACCOUNTING FARMS BY FARMING-TYPE AREAS FOR THE PERIODS 1925-1929 AND 1930-1934 AND FOR THE YEARS 1936, 1937, 1938, 1939, AND 1940

Farming-type areas	1925-1929	1930-1934	1936	1937	1938	1939	1940
Area 1, Chicago Dairy	\$11.04	\$ 2.64	\$14.35	\$ 8.69	\$ 8.12	\$ 9.23	\$13.50
Area 2, Northwestern Mixed Livestock ^a	15.11	2.70	16.43	8.46	8.34	11.45	12.34
Area 3, Western Livestock and Grain ^a	10.24	2.84	13.14	10.83	9.24	13.01	10.66
Area 4, East-Central Cash Grain ^a	10.30	2.76	13.15	10.30	8.66	13.42	9.99
Area 5, West-Central General Farming	7.69	1.99	7.72	8.21	6.78	8.79	8.08
Area 6, St. Louis Dairy and Wheat	5.41	.92	5.84	6.17	3.71	6.65	6.90
Area 7, South-Central Mixed Farming	3.34	.55	4.97	3.48	2.47	3.18	3.36
Area 8, Wabash Valley Grain and Livestock	5.34	1.20	7.47	6.12	3.31	5.04	5.22
State Average (weighted by acres in area)	\$ 8.59	\$ 2.20	\$11.06	\$ 8.58	\$ 7.14	\$10.33	\$ 9.09

^aFor these areas, records from the Farm Bureau Farm Management Service are included for 1938, 1939, and 1940.

The amount of oats increased in all the areas of the state, and the amount of corn decreased in all the areas except Area 8.

A larger oat crop and a smaller corn crop in Illinois in 1940 than in 1939 were the principal factors affecting the farm supplies of these two grains at the end of the year as compared with those at the beginning. Another factor affecting the corn supplies was the corn-sealing program; a large proportion of the 1939 crop was sealed, but most of the 1940 crop remained free.

Variations in Net Income an Acre with Inventory Changes Included. When inventory changes were included, the average net income an acre on Illinois accounting farms was 12 percent lower in 1940 than in 1939 (Table 7). This decrease is in contrast to an increase of 26 percent in the net cash income an acre. The net an acre for 1940 was \$2.27 larger on the inventory basis than on the cash basis. Incomes have been larger on the inventory basis than on the cash basis for all years since 1925, with the exception of 1930, 1931, and 1932.

Net incomes an acre on the inventory basis were higher in 1940 than in 1939 in all the areas except 3, 4, and 5, the three largest areas of the state. The range in net income an acre was from \$3.36 in Area 7 to \$13.50 in Area 1.

Income from Agricultural Conservation Payments. Cash farm incomes of accounting farmers in 1940 included government payments which were received during the accounting year for participation in agri-

TABLE 8.—PERCENT OF ILLINOIS ACCOUNTING FARMERS RECEIVING AGRICULTURAL CONSERVATION PAYMENTS IN 1940 AND THE PAYMENTS PER FARM AND PER ACRE, BY FARMING-TYPE AREAS

Area	Number of farms	Acres per farm	Percent of farms receiving payments	Payments per farm, all farms	Payments per farm, cooperating farms	Payments per acre, cooperating farms	Taxes per acre, all farms
Area 1.....	81	180	89	\$282	\$317	\$1.76	\$1.53
Area 2.....	456	212	90	399	445	2.10	1.31
Area 3.....	536	249	91	546	602	2.42	1.35
Area 4.....	884	270	93	665	717	2.66	1.50
Area 5.....	316	255	92	426	463	1.81	1.15
Area 6.....	255	200	92	314	342	1.71	.83
Area 7.....	98	248	89	226	254	1.03	.60
Area 8.....	57	227	91	339	372	1.64	.90
Area 9.....	55	234	98	243	248	1.06	.63

cultural conservation programs. In a few cases, delayed payments for 1939, as well as payments for 1940, were included. Of the 55 farms in Area 9, 98 percent received payments (Table 8).

The percent of farms receiving payments in other areas ranged down to 89 in Areas 1 and 7. The largest payments an acre were in the areas with the highest investments an acre, Areas 2, 3, and 4. In all the areas, the payments an acre far exceeded the taxes an acre.

Standards for Measuring Operating Efficiency

Farm account studies have repeatedly shown the principal factors affecting relative earnings to be land use, crop yields, amount of live-stock, livestock efficiency, labor cost, machinery cost, and prices received for things sold. They have also shown the following facts: (1) that the quality of land affects the cropping system and the crop yields; (2) that the kind of livestock influences the kinds and amounts of feed fed as well as the returns for feed fed; (3) that the size and intensity of the farm business affects practically all the cost items; and (4) that price relationships and quantities of products produced affect the relative profitability of various types of farming for any particular year.

With the foregoing facts in mind, 1,890 farms in Areas 2, 3, 4, and 5 were sorted into groups as indicated in Figures 4, 5, and 6 and in Tables 9 and 10. Similar figures and tables for each of the nine major type-of-farming areas of the state can be found in the various reports for 1940. These reports are available upon request and may be used by any farmer who keeps records to analyze his efficiency.

The terms used in the various figures and tables are the same as those used in the Illinois Farm Account Book. For example, "improved land,"

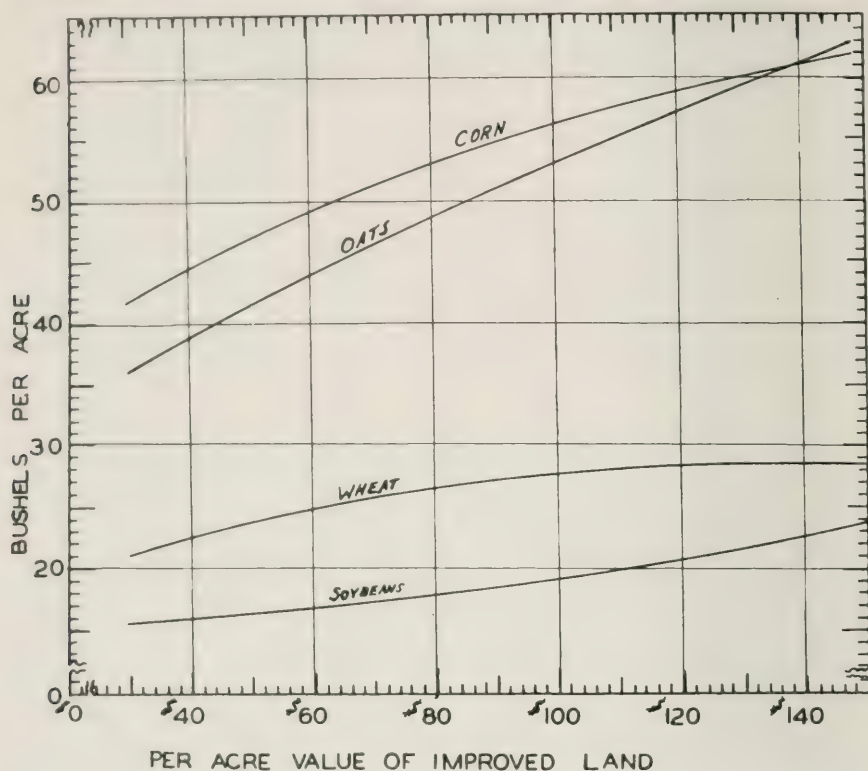


FIG. 4.—AVERAGE YIELDS OF CORN, OATS, WHEAT, AND SOYBEANS WITH VARYING VALUES OF IMPROVED LAND, FARMING-TYPE AREAS, 3, 4, AND 5, 1940

a term that is used in Figure 4, means tillable land and land occupied by farmstead, roads, and orchards.

Crop Yields. Figure 4 shows the effect of quality of land (expressed as value an acre) on yields of corn, oats, wheat, and soybeans. Land valued at \$30 an acre produced about 42 bushels of corn, 36 bushels of oats, 21 bushels of wheat, and 15 bushels of soybeans; land valued at \$150 an acre produced about 62 bushels of corn, 63 bushels of oats, 28.5 bushels of wheat, and 24 bushels of soybeans. The differences in acre-yields between \$30 land and \$150 land are as follows: corn, 20 bushels; oats, 27 bushels; wheat, 7.5 bushels; and soybeans, 9 bushels.

Such variations are significant, but the fact should be kept in mind that these averages were for one year only and that crop yields on various grades of land may vary widely under conditions entirely different from

those in 1940. Data of this type are valuable because they enable farmers to compare the yields on their own farms with those on farms having a similar quality of land.

Source of Income. The grouping of accounting farms according to source of income for 1940 gives each farmer an opportunity to compare his farm with the average of other farms having similar sources of income. It also gives him an opportunity to study investments, land use, crop yields, labor requirements, horse and machinery requirements, and other factors that are associated with various types of farming.

Each farmer, however, should use caution in interpreting the data in Table 9. For example, the fact that cattle farms showed the largest rate earned on the investment for 1940 and that hog farms showed the smallest does not mean such a relationship will prevail over a long period of years. The relative profitableness of these enterprises in 1940 was influenced by conditions affecting price and production.

The following data indicate the average rate earned on investment for the 10-year period, 1926-1935, for farms from the same area grouped according to source of income: farms with over 60 percent of their incomes from grain, 4.0 percent; farms with 40-59 percent of their incomes from grain, 3.6 percent; hog farms, 2.8 percent; cattle farms, 3.5 percent; dairy farms, 2.8 percent; and mixed-income farms, 3.1 percent. On the basis of earnings on accounting farms for the past 15 years, the grain farms in Areas 2, 3, 4, and 5 have shown higher current returns than livestock farms have. In these records, no charge was made for fertility losses, and no inference is intended concerning the results if these systems are followed for another 15-year period. The mechanization of farms in this area in recent years has reduced the cost of producing grains more than the cost of producing livestock and livestock products.

When comparing the returns on the various groups of farms per \$100 worth of feed fed, one should consider the fact that the necessary returns per \$100 worth of feed fed to pay for feed (including pasture), labor, equipment, buildings, and other costs vary widely. According to 5-year averages of complete cost studies (1933-1937), the necessary returns were: poultry, \$195; dairy cattle, \$157; hogs, \$127; and feeder cattle, \$117.

Furthermore, when comparing crop yields for the various types of farming, one should note the following items which indicate that the grain farms were located on the better land: (1) high value of land per acre; (2) large percent of land area tillable; (3) large percent of land in grain; and (4) high land tax per acre.

TABLE 9. SOURCE OF INCOME RELATED TO FARM EARNINGS AND OTHER FACTORS FOR ACCOUNTING FARMS IN FARMING-TYPE AREAS 2, 3, 4, AND 5, 1940

Item	Source of income					
	Grain 40% +	Dairy sales 40% +	Hogs 40% +	Cattle 40% +	General farms	
					L.S. 60% -	L.S. 60% +
Number of farms	482	97	310	293	317	391
Percent of income from prod. l.s. . .	30.2	81.7	85.9	89.1	50.3	74.1
Percent of income from crops . . .	55.6	6.0	.....	.....	32.0	10.6
Investments						
Total per farm	\$40 775	\$28 235	\$29 788	\$52 827	\$33 171	\$32 653
Total per acre	148	154	142	161	144	142
Land per acre	104	89	87	97	94	85
Improvements per acre	15	26	20	20	18	21
Machinery per acre*	9	11	10	9	9	9
Earnings						
Per farm						
Gross earnings	\$ 5 870	\$ 4 617	\$ 4 691	\$ 8 676	\$ 4 794	\$ 4 961
Gross expenses ^b	2 791	2 755	2 793	4 394	2 491	2 679
Net earnings	\$ 3 079	\$ 1 862	\$ 1 898	\$ 4 282	\$ 2 303	\$ 2 282
Per acre						
Gross earnings	\$ 21.47	\$ 25.50	\$ 22.55	\$ 26.45	\$ 20.81	\$ 21.52
Gross expenses ^b	10.18	15.29	13.42	13.39	10.80	11.60
Net earnings	\$ 11.29	\$ 10.21	\$ 9.13	\$ 13.06	\$ 10.01	\$ 9.92
Rate earned on investment (percent)	7.6	6.8	6.4	8.2	7.0	7.1
Labor and management earnings	\$ 1 577	\$ 980	\$ 946	\$ 2 182	\$ 1 192	\$ 1 197
Size and Intensity						
Acres per farm	275	186	213	332	231	231
Percent of land area tillable . . .	89.8	80.0	79.6	84.5	86.7	81.3
Percent of tillable land in grain . .	68.4	53.5	61.5	60.8	60.9	57.5
Percent in hay and pasture . . .	23.3	40.4	33.5	34.9	31.4	37.1
Feed fed per acre to prod. l.s. . .	\$ 4.64	\$ 12.05	\$ 14.81	\$ 17.00	\$ 7.62	\$ 10.99
Months of labor per 100 crop A. . .	9.9	21.3	15.4	12.8	12.7	15.8
Total months of labor	20.5	23.6	20.5	27.5	20.3	22.9
Crop Yields per Acre						
Corn, bu.	57.1	52.8	56.2	59.4	54.8	54.7
Livestock Returns						
Per \$100 feed fed	\$154	\$181	\$137	\$142	\$148	\$153
Hog returns per litter	73	71	87	76	74	80
Dairy returns per cow	78	136	72	80	83	95
Expense Factors						
Labor cost per crop acre ^b	\$ 4.88	\$ 10.77	\$ 7.59	\$ 6.51	\$ 6.20	\$ 7.77
Horse and machinery cost per crop acres	4.39	7.48	5.68	5.86	4.75	5.49
Improvement cost per acre . . . .	.99	1.41	1.22	1.29	1.06	1.25
Land tax per acre	1.23	1.19	1.13	1.19	1.20	1.15

*Machinery includes farm share of automobile.

^bExpenses include operator's and family's labor.

Differences in expenses, on the other hand, are highly significant for the 6 groups of farms. Labor input per 100 crop acres was highest on the dairy farms, where 21.3 months of labor were used, and lowest on the grain farms, where 9.9 months of labor were used. The dairy farmers evidently utilized a large amount of available labor to increase the size of their businesses without increasing the size of their farms.

The labor cost per crop acre ranged from \$10.77 on the dairy farms to \$4.88 on the grain farms; the horse and machinery cost per crop acre was highest on the dairy farms, where it averaged \$7.48, and lowest on the grain farms, where it averaged \$4.39; the improvement cost per acre averaged \$1.41 on the dairy farms and 99 cents on the grain farms.

Size of Farm. When the farm records in Farming-Type Areas 2, 3, 4, and 5 are sorted according to the total acres in the farm, they indicate that the largest farms had a greater total investment in land, improvements, and equipment than did the smallest ones (Table 10). The operators on the largest farms took in more money during the year than did those on the smallest ones; and, after deductions were made for farm business expenditures and interest on the investment, the 148 largest farms had labor and management earnings which averaged \$2,737 contrasted with \$664 for the 212 smallest farms. The latter had higher investments an acre for improvements, machinery, and total investment, indicating a higher capital input. The rate earned on investment was largest for the largest farms.

For the 10 year period, 1926-1935, the average rate earned on investment for accounting farms by size groups in Areas 3, 4, and 5 was as follows: 0-99 acres, .8 percent; 100-139 acres, 2.0 percent; 140-179 acres, 2.6 percent; 180-219 acres, 2.8 percent; 220-259 acres, 3.0 percent; 260-299 acres, 3.5 percent; 300-339 acres, 3.4 percent; and 340 acres and over, 3.3 percent. In recent years, the rate earned on investment increased as the size of farm increased to about 300 acres, declined slightly for farms ranging from 300 to 400 acres, and increased again for farms ranging from 400 to 600 acres. Those farms that are too large for one tractor but not large enough for two seem to be an awkward size.

The smallest farms were operated more intensively than were the largest ones. This variation was indicated by the higher gross earnings an acre, by the larger labor and capital input an acre, and by the larger value of feed fed an acre to productive livestock.

The method used to increase the volume of business depended upon the individual farm. Some farm operators apparently increased the volume of their businesses by improving the quality and increasing the amount of livestock; others, by growing more intensive crops, by in-

TABLE 10.—SIZE OF FARM RELATED TO FARM EARNINGS AND OTHER FACTORS FOR ACCOUNTING FARMS IN FARMING-TYPE AREAS 2, 3, 4, AND 5, 1940

Item	Total acres in farm					
	41 to 120	121 to 200	201 to 280	281 to 360	361 to 440	441 or more
Number of farms.....	212	662	456	285	127	148
Acres per farm.....	103	167	242	320	398	566
Investments						
Total per farm.....	\$15 915	\$25 552	\$36 160	\$48 050	\$56 229	\$78 079
Total per acre.....	155	153	149	150	141	137
Land per acre.....	91	96	96	98	91	90
Improvements per acre.....	25	20	18	17	17	16
Machinery per acre ^a	12	10	10	9	8	8
Earnings						
Per farm						
Gross earnings.....	\$ 2 502	\$ 3 904	\$ 5 347	\$ 6 917	\$ 7 848	\$11 457
Gross expenses ^b	1 582	2 079	2 708	3 398	3 939	5 329
Net earnings.....	\$ 920	\$ 1 825	\$ 2 639	\$ 3 519	\$ 3 909	\$ 6 128
Per acre						
Gross earnings.....	\$ 24.41	\$ 23.33	\$ 22.05	\$ 21.58	\$ 19.72	\$ 20.20
Gross expenses ^b	15.42	12.42	11.17	10.60	9.90	9.40
Net earnings.....	\$ 8.99	\$ 10.91	\$ 10.88	\$ 10.98	\$ 9.82	\$ 10.80
Rate earned on investment (percent).....	5.8	7.2	7.4	7.3	7.0	7.9
Labor and management earnings.....	\$ 664	\$ 1 099	\$ 1 371	\$ 1 654	\$ 1 641	\$ 2 737
Size and Intensity						
Percent of land area tillable....	88.1	86.9	85.5	85.2	81.5	82.4
Percent of tillable land in grain	59.9	62.0	62.7	63.5	63.1	61.9
Percent in hay and pasture.....	36.2	32.2	30.9	29.3	29.7	29.4
Feed fed per acre to prod. l.s. ^c	\$ 12.15	\$ 10.66	\$ 9.35	\$ 9.80	\$ 9.34	\$ 9.47
Percent of income from prod. l.s.	70.4	65.2	59.6	61.4	65.1	63.1
Percent of income from grain....	11.9	19.2	25.3	24.6	21.3	23.7
Months of labor per 100 crop A.	20.9	15.2	13.1	11.5	10.9	9.9
Total months of labor.....	14.9	17.8	21.8	25.3	28.5	36.2
Number of work horses.....	2.4	2.7	3.3	3.6	4.1	4.5
Crop Yields per Acre						
Corn, bu.....	55.5	55.9	56.0	56.5	54.3	58.4
Livestock Returns						
Per \$100 feed fed.....	\$ 156	\$154	\$151	\$144	\$146	\$138
Hog returns per litter.....	79	78	79	79	79	78
Daily returns per cow.....	83	90	94	91	82	85
Expense Factors						
Labor cost per crop acre ^b	\$ 10.19	\$ 7.48	\$ 6.46	\$ 5.84	\$ 5.49	\$ 4.94
Horse and machinery cost per crop acre ^a	6.11	5.41	5.07	4.85	4.89	4.95
Improvement cost per acre.....	1.42	1.23	1.15	1.14	1.07	.96
Land tax per acre.....	1.25	1.22	1.18	1.20	1.16	1.14

^aMachinery includes farm share of automobile.^bExpenses include operator's and family's labor.

creasing crop yields, or by developing special markets; still others, by increasing the acreage operated or by applying combinations of the above methods.

Labor and Horse and Machinery Expenses. The effect of the amount of feed fed an acre to productive livestock on labor and horse and machinery cost per crop acre is shown graphically in Figures 5 and 6 for the same size groups of farms as were used in Table 10.

Four significant things are apparent in these charts: (1) The costs per crop acre increased as the size of the farms decreased; (2) the costs increased as the amount of feed fed per acre increased; (3) the costs decreased much more rapidly when the size of farms increased from 120 acres or less to 121-200 acres than when they increased from 201-280 to 281-360 acres, or into the larger size groups (this situation is explained by the fact that dairy cattle and poultry predominate on the smaller farms and that beef cattle predominate on the larger farms); and (4) the costs

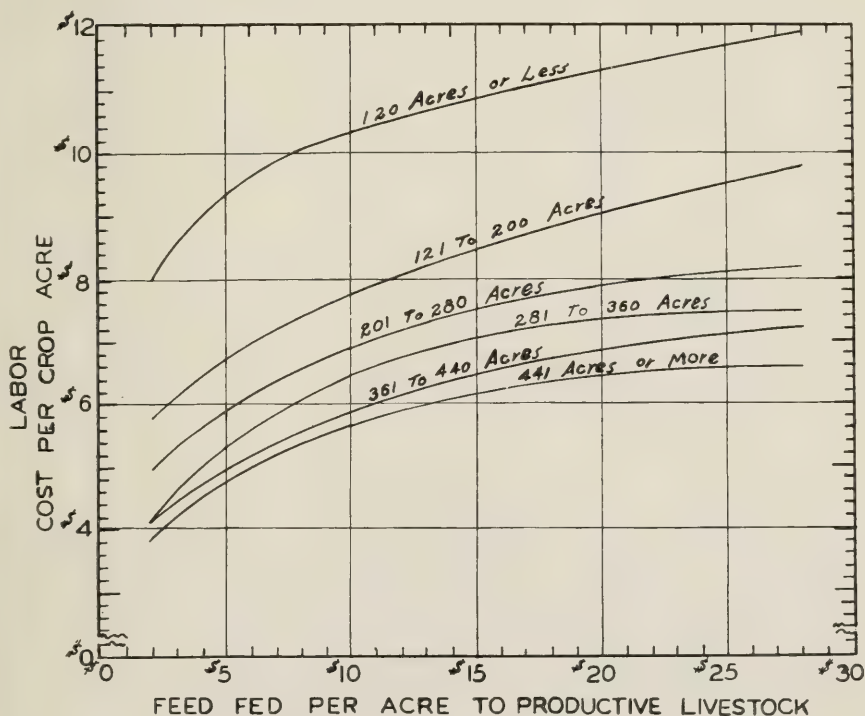


FIG. 5.—LABOR COST PER CROP ACRE FOR FARMS OF VARYING SIZE AND WITH VARYING AMOUNTS OF FEED FED TO PRODUCTIVE LIVESTOCK, FARMING-TYPE AREAS 2, 3, 4, AND 5, 1940

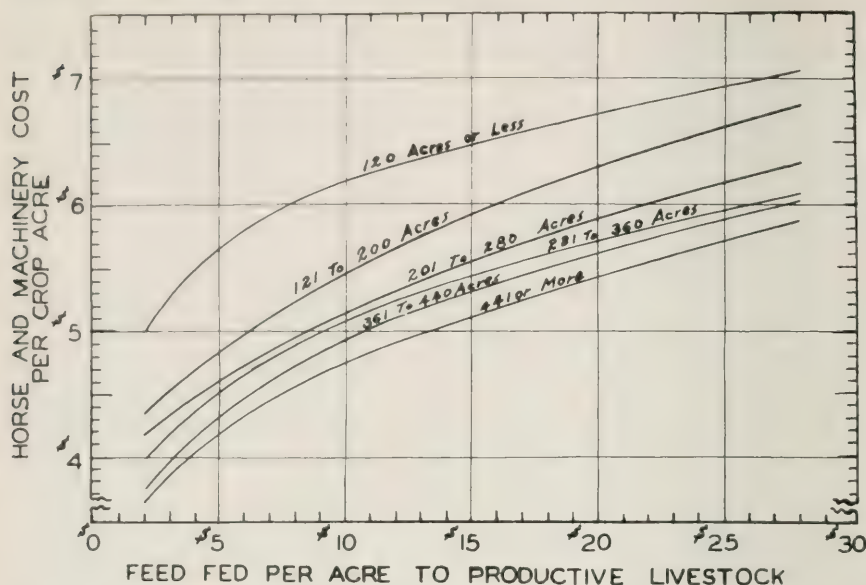


FIG. 6.—HORSE AND MACHINERY COST PER CROP ACRE FOR FARMS OF VARYING SIZE AND WITH VARYING AMOUNTS OF FEED FED TO PRODUCTIVE LIVESTOCK, FARMING-TYPE AREAS 2, 3, 4, AND 5, 1940

increased rapidly as the feed fed an acre increased from \$2 to about \$8 an acre, especially for farms in the smallest size group, and the costs increased less and more uniformly as larger amounts of feed were fed.

Farmers who know what the cost for labor and for horse and machinery expense per crop acre was in 1940 will find that these data contain a basis for comparing their expenses with averages for other farms of the same size and with the same intensity of livestock.¹

Variations by Farming-Type Areas

The data in Tables 11 and 12 indicate a wide range of farming conditions in Illinois and afford ample evidence of the need for grouping counties by farming-type areas. They show a range in size from 180 acres in Area 1 to 270 acres in Area 4 and an average investment per farm varying from \$11,733 in Area 9 to \$45,728 in Area 4.

Crop yields varied from area to area with the productivity of the soil and with the weather conditions. The relative proportion of income from grain, hogs, cattle, dairy, and poultry varied according to feeds available,

¹Data for other areas of Illinois are available in the area reports for 1940.

markets, labor, and other factors. Expenses per crop acre for labor and for horses and machinery varied with the size of farm, the amount and kind of livestock, the wages for labor, and the type of equipment.

Data for Counties and Groups of Counties

Averages were calculated for each county with 30 or more records and for groups of counties with less than 30 records. These averages are arranged in Table 13 according to farming-type areas. The averages for Area 1 are given at the front of the list, and those for Area 9 at the end.

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸Monthly Indexes of Non-Agricultural and National Income, Supplement, August, 1937, B.A.E.; Demand and Price Situation, or Agricultural Situation. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933 and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

TABLE 11. INVESTMENTS, CASH RECEIPTS, CASH EXPENSES, AND INVENTORY CHANGES BY FARMING-TYPE AREAS, 1940

Item	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9
Capital Investment, Total	\$29 258	\$34 575	\$38 493	\$45 728	\$28 681	\$17 684	\$14 035	\$16 716	\$11 733
Land	14 034	19 572	23 757	30 925	17 809	9 614	7 504	10 378	5 907
Farm improvements	6 350	5 829	5 023	5 028	3 581	2 725	2 196	2 087	3 323
Machinery and equipment	2 241	2 284	2 406	2 867	1 999	1 732	1 320	1 427	1 206
Feed and grain	2 260	2 738	3 555	2 591	2 384	1 594	1 127	1 217	843
Livestock, total	4 373	4 152	3 752	4 317	2 908	2 019	1 888	1 607	1 454
Cash Receipts, Total	\$6 852	\$7 857	\$8 072	\$8 138	\$6 176	\$3 947	\$3 092	\$3 520	\$2 364
Feed and grain	532	927	1 600	2 922	1 264	853	530	1 062	587
AAA payments	282	399	546	665	426	314	226	339	243
Labor and miscellaneous	292	298	389	432	363	305	241	240	181
Livestock, total	5 746	6 253	5 537	4 119	4 123	2 475	2 095	1 879	1 353
Horses	53	29	36	51	43	39	75	39	45
Cattle	2 079	3 464	2 643	1 916	1 782	603	594	646	396
Hogs	698	1 456	2 020	1 446	1 455	531	692	686	331
Sheep	31	435	204	127	124	38	110	67	38
Poultry and eggs	299	264	207	280	177	338	334	280	179
Dairy sales	2 586	822	365	479	522	915	290	161	364
Cash Expenses, Total	\$4 551	\$5 277	\$5 386	\$5 019	\$4 211	\$2 390	\$2 025	\$2 240	\$1 752
Farm improvements	421	390	429	422	368	251	311	203	213
Machinery and equipment	933	944	1 123	1 353	1 024	831	623	703	605
Feed and grain	677	827	986	676	726	399	352	371	184
Crop expense	190	180	174	199	124	85	102	116	96
Hired labor	523	367	466	486	370	236	161	187	249
Taxes	276	277	336	406	294	167	148	204	147
Livestock and miscellaneous	1 531	2 292	1 872	1 477	1 305	421	328	410	258
Cash Balance	\$2 301	\$2 580	\$2 686	\$3 119	\$1 965	\$1 557	\$1 067	\$1 280	\$ 612
Increase in inventory	771	771	660	264	870	514	384	477	514
Total unpaid labor	743	736	695	680	770	689	618	574	530
Net farm income	\$2 430	\$2 615	\$2 651	\$2 703	\$2 065	\$1 382	\$ 833	\$1 183	\$ 596

TABLE 12.—FACTORS HELPING TO ANALYZE THE FARM BUSINESS AVERAGES FOR FARMING-TYPE AREAS, 1940

Item	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9
Size of farm, acres.....	180	212	249	270	255	200	248	227	234
Tillable land (percent).....	82	83	80	90	80	80	81	86	74
Inventory Basis									
Gross receipts per acre.....	\$29.46	\$24.75	\$22.32	\$21.37	\$17.92	\$16.45	\$ 9.83	\$13.14	\$ 8.99
Total expenses per acre.....	15.96	12.41	11.66	11.38	9.84	9.55	6.47	7.92	6.44
Net receipts per acre.....	\$13.50	\$12.34	\$10.66	\$ 9.99	\$ 8.08	\$ 6.90	\$ 3.36	\$ 5.22	\$ 2.55
Cash Basis									
Gross cash income per acre.....	\$38.07	\$37.10	\$32.46	\$30.08	\$24.18	\$19.72	\$12.48	\$15.52	\$10.12
Total cash expense per acre.....	29.41	28.39	24.45	21.06	19.50	15.38	10.67	12.41	9.77
Net cash income per acre.....	\$ 8.66	\$ 8.71	\$ 8.01	\$ 9.02	\$ 4.68	\$ 4.34	\$ 1.81	\$ 3.11	\$.35
Acres in: Corn.....	48	56	66	77	52	29	39	48	28
Oats.....	25	35	31	34	17	14	11	10	6
Wheat.....	3	2	8	16	27	36	18	34	16
Soybeans.....	4	6	16	33	20	4	4	9	2
Bushels per acre: Corn.....	61	64	60	52	54	47	36	42	38
Oats.....	64	60	51	56	49	40	33	32	32
Wheat.....	31	30	28	26	26	24	20	21	18
Soybeans.....	17	21	22	20	21	14	11	9	9
Value of feed fed to livestock.....	\$2 074	\$3 257	\$3 120	\$2 109	\$2 269	\$1 457	\$1 302	\$1 235	\$ 872
Returns per \$100 feed fed.....	165	136	147	150	151	166	152	138	132
Feed fed per acre to livestock.....	\$16.52	\$15.36	\$12.55	\$ 8.13	\$ 8.88	\$ 7.28	\$ 5.25	\$ 5.45	\$ 3.73
Returns per acre from livestock.....	27.32	22.45	18.44	12.16	13.46	12.11	8.11	7.51	6.03
Horse and machinery cost per crop acre.....	\$ 6.91	\$ 5.46	\$ 5.62	\$ 5.00	\$ 4.87	\$ 5.13	\$ 3.69	\$ 4.20	\$ 5.20
Labor cost per crop acre.....	9.95	7.47	6.98	5.60	7.06	7.18	5.69	5.09	7.05
Value of land per acre.....	\$ 78	\$ 92	\$ 96	\$ 114	\$ 70	\$ 48	\$ 30	\$ 46	\$ 25
Value of improvements per acre.....	35	28	20	19	14	14	9	10	10
Total investment per acre.....	163	163	135	169	112	88	57	74	50
Number of farms included.....	81	456	536	884	316	255	98	57	55

^aCash expense includes estimated value of unpaid labor.

TABLE 13. SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940

Accounting item	McHenry	DuPage, Kane, Boone, Lake	DeKalb	Stephen- son	Lee
Capital investment, total.....	1 \$26 187	\$31 595	\$44 179	\$23 651	\$46 147
Land.....	2 11 255	16 149	25 985	11 234	29 546
Farm improvements.....	3 6 657	6 117	6 848	5 535	5 989
Horses.....	4 411	381	349	274	283
Cattle.....	5 3 309	3 518	3 788	2 179	2 937
Hogs.....	6 241	484	772	600	763
Sheep.....	7 12	64	296	25	191
Poultry.....	8 131	131	103	106	92
Feed and grain.....	9 1 996	2 461	3 442	1 719	3 678
Machinery and equipment*.....	10 2 175	2 290	2 596	1 979	2 668
Income, net increases, total.....	11 \$ 5 352	\$ 5 712	\$ 6 312	\$ 4 525	\$ 6 452
Cattle.....	12 638	1 626	2 762	1 147	2 049
Dairy sales.....	13 3 320	2 028	645	1 296	581
Hogs.....	14 424	854	1 500	1 318	1 426
Sheep.....	15 6	41	117	22	176
Poultry and eggs.....	16 253	275	252	223	247
Farm products used in household.....	17 222	277	233	246	246
Feed and grain.....	18 121	274	327	...	1 079
AAA payments.....	19 322	251	431	253	564
Labor and miscellaneous.....	20 46	86	45	20	84
Expenses, net decreases, total.....	21 \$ 2 066	\$ 2 180	\$ 2 273	\$ 1 532	\$ 2 315
Farm improvements.....	22 325	328	359	226	380
Feed and grain.....	23 .....	...	...	126	...
Machinery and equipment*.....	24 649	705	769	506	750
Hired labor.....	25 522	523	437	235	471
Crop expense.....	26 179	199	248	132	234
Taxes.....	27 250	296	312	194	344
Livestock and miscellaneous.....	28 141	129	148	113	136
Income less expenses.....	29 \$ 3 286	\$ 3 532	\$ 4 039	\$ 2 993	\$ 4 137
Unpaid labor.....	30 812	690	740	708	689
Net farm income.....	31 \$ 2 474	\$ 2 842	\$ 3 299	\$ 2 285	\$ 3 448
Rate earned on investment, percent.....	32 9.4	9.0	7.5	9.7	7.5
Labor and management earnings.....	33 \$ 1 729	\$ 1 790	\$ 1 660	\$ 1 655	\$ 1 702
Excess of sales over expenses.....	34 2 313	2 291	3 110	1 861	3 269
Increase in inventory.....	35 751	964	696	886	622
Number of farms included.....	36 35	46	132	62	55
Size of farm, acres.....	37 172	186	216	160	261
Gross receipts per acre.....	38 \$ 31.19	\$ 30.64	\$ 29.18	\$ 28.21	\$ 24.75
Total expenses per acre.....	39 16.77	15.39	13.93	13.97	11.53
Net receipts per acre.....	40 \$ 14.42	\$ 15.25	\$ 15.25	\$ 14.24	\$ 13.22
Value of land per acre.....	41 \$ 66	\$ 87	\$120	\$ 70	\$113
Value of improved land per acre.....	42 70	90	122	72	117
Value of improvements per acre.....	43 39	33	32	35	23
Total investment per acre.....	44 153	170	204	147	177
Percent of land area tillable.....	45 79.4	83.4	91.4	84.0	88.4
Percent of tillable land in:					
Corn.....	46 32.7	32.0	35.0	24.4	33.4
Oats.....	47 16.4	17.8	20.4	19.6	20.7
Wheat.....	48 1.5	1.9	1.4	.4	1.5
Soybeans for grain.....	49 1.1	3.7	4.5	.8	7.0
Other cultivated crops.....	50 7.5	7.6	9.7	6.8	9.1
Legume hay and pasture.....	51 26.4	24.5	19.0	30.6	20.3
Nonlegume hay and pasture.....	52 14.4	12.5	10.0	17.4	8.0
Bushels per acre: Corn.....	53 61.0	60.7	65.1	70.8	58.7
Oats.....	54 57.1	68.7	70.0	55.5	59.7
Wheat.....	55 30.5	32.3	31.4	24.0	29.1
Barley.....	56 53.6	46.3	...	...	...
Soybeans.....	57 20.7	16.7	19.6	24.5	21.4
Feed fed per acre to livestock.....	58 \$ 15.77	\$ 17.04	\$ 18.62	\$ 16.97	\$ 12.26
Returns for \$100 feed fed.....	59 177	158	135	153	146
Poultry returns per hen.....	60 2.42	3.08	2.85	2.18	2.83
Number of litters farrowed.....	61 7.5	14.4	18.4	17.0	16.8
Returns per litter.....	62 \$ 70	\$ 82	\$ 87	\$ 83	\$ 89
Dairy returns per cow.....	63 130	134	101	94	89
Home and machinery cost per crop acre.....	64 \$ 7.56	\$ 6.49	\$ 5.40	\$ 6.33	\$ 4.55
Labor cost per crop acre.....	65 11.65	8.79	6.75	9.24	5.83
Improvement cost per acre.....	66 1.89	1.76	1.66	1.41	1.46
Taxes per acre.....	67 1.46	1.59	1.44	1.21	1.32

*Includes farm share of automobile.

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—*Continued*

	Ogle	Rock Island	Winnebago	Whiteside	Jo Daviess	Carroll	Henry	McDonough
1	\$32 706	\$27 191	\$29 370	\$28 855	\$24 371	\$27 984	\$39 470	\$37 163
2	17 725	15 515	14 025	15 265	13 105	15 235	23 435	23 955
3	5 798	4 240	6 601	5 265	4 387	5 091	5 506	4 265
4	365	311	429	289	374	379	306	304
5	2 809	1 727	2 748	2 633	2 219	2 485	2 884	1 857
6	808	763	703	695	646	603	1 048	1 133
7	69	62	132	49	53	145	112	65
8	83	106	99	106	82	112	84	75
9	2 639	2 499	2 370	2 606	1 565	2 167	3 434	3 225
10	2 410	1 968	2 263	1 947	1 940	1 767	2 660	2 284
11	\$ 5 539	\$ 4 709	\$ 5 188	\$ 5 576	\$ 4 608	\$ 5 309	\$ 6 188	\$ 5 925
12	2 093	1 345	1 212	2 308	1 237	2 290	2 461	1 596
13	654	565	1 601	860	1 053	553	371	206
14	1 547	1 380	1 346	1 484	1 426	1 519	2 118	2 324
15	60	56	89	29	65	72	120	52
16	230	260	227	226	216	241	217	188
17	251	286	258	233	272	228	263	254
18	265	296	60	.....	22	.....	.....	741
19	384	452	346	406	270	382	574	494
20	55	69	49	30	47	24	64	70
21	\$ 1 947	\$ 1 608	\$ 1 766	\$ 2 090	\$ 1 501	\$ 1 914	\$ 2 455	\$ 1 979
22	362	232	278	254	216	253	330	245
23	.....	.....	.....	381	.....	455	58	.....
24	622	546	592	618	506	494	847	742
25	406	300	334	332	352	251	540	414
26	135	134	180	135	106	126	180	150
27	304	293	266	240	214	227	368	298
28	118	103	116	130	107	108	132	130
29	\$ 3 592	\$ 3 101	\$ 3 422	\$ 3 486	\$ 3 107	\$ 3 395	\$ 3 733	\$ 3 946
30	841	711	787	712	724	715	757	702
31	\$ 2 751	\$ 2 390	\$ 2 635	\$ 2 774	\$ 2 383	\$ 2 680	\$ 2 976	\$ 3 244
32	8.4	8.8	9.0	9.6	9.8	9.6	7.5	8.7
33	\$ 1 696	\$ 1 568	\$ 1 755	\$ 1 856	\$ 1 725	\$ 1 809	\$ 1 536	\$ 1 914
34	2 485	2 617	2 607	1 857	1 951	1 853	2 767	2 846
35	856	198	557	1 396	884	1 314	703	846
36	44	42	32	31	30	28	78	70
37	224	201	222	196	233	187	238	241
38	\$ 24.75	\$ 23.43	\$ 23.33	\$ 28.38	\$ 19.77	\$ 28.39	\$ 25.98	\$ 24.62
39	12.46	11.54	11.48	14.26	9.55	14.06	13.49	11.14
40	\$ 12.29	\$ 11.89	\$ 11.85	\$ 14.12	\$ 10.22	\$ 14.33	\$ 12.49	\$ 13.48
41	\$ 79	\$ 77	\$ 63	\$ 78	\$ 56	\$ 81	\$ 98	\$100
42	85	85	67	80	64	89	105	109
43	26	21	30	27	19	27	23	18
44	146	135	132	147	105	150	166	154
45	77.7	76.4	77.7	84.5	62.8	81.6	82.3	82.6
46	30.7	33.7	29.9	29.9	23.8	27.2	33.6	32.4
47	24.5	14.7	18.9	19.3	16.9	22.3	18.2	13.1
48	.6	2.4	.6	3.8	.7	.1	1.8	7.5
49	2.5	2.3	2.2	1.9	.1	.3	4.7	12.9
50	4.8	5.5	7.6	3.9	7.2	5.0	4.7	5.5
51	26.6	29.0	28.7	23.3	30.3	29.6	25.5	21.0
52	10.3	12.4	12.1	17.9	21.0	15.5	11.5	7.6
53	67.6	58.8	65.2	59.8	71.6	70.7	62.5	65.6
54	56.6	45.6	52.0	54.3	54.6	55.4	49.7	51.7
55	23.0	28.8	26.0	32.8	27.0	25.0	30.3	28.5
56	.....	.....	.....	.....	.....	.....	.....	.....
57	23.0	19.1	22.4	19.7	15.0	22.5	21.5	24.5
58	\$ 14.30	\$ 11.78	\$ 14.60	\$ 16.56	\$ 10.83	\$ 16.90	\$ 15.44	\$ 13.41
59	149	161	143	156	165	153	149	141
60	2.83	2.59	2.85	2.41	2.47	2.32	2.60	3.01
61	17.0	19.5	16.7	19.0	17.0	20.0	25	29
62	\$ 95	\$ 74	\$ 80	\$ 89	\$ 91	\$ 83	\$ 84	\$ 80
63	91	88	105	97	86	86	85	71
64	\$ 5.37	\$ 5.75	\$ 5.46	\$ 6.00	\$ 6.05	\$ 5.72	\$ 6.47	\$ 5.14
65	8.43	8.23	7.75	8.30	9.72	8.48	8.27	6.36
66	1.62	1.15	1.25	1.29	.93	1.35	1.39	1.02
67	1.36	1.46	1.20	1.22	.92	1.21	1.54	1.24

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—*Continued*

Accounting item	Knox	Bureau	Marshall-Putnam	Peoria	Fulton
Capital investment, total.....	1 \$38 924	\$41 457	\$52 395	\$34 108	\$30 114
Land.....	2 23 989	25 694	33 705	21 680	17 802
Farm improvements.....	3 5 255	5 812	6 451	4 571	4 542
Horses.....	4 269	291	298	323	250
Cattle.....	5 1 961	2 288	2 888	1 374	1 807
Hogs.....	6 879	1 015	965	726	885
Sheep.....	7 99	153	246	74	215
Poultry.....	8 73	115	86	107	66
Feed and grain.....	9 3 917	3 391	5 209	3 030	2 580
Machinery and equipment*.....	10 2 482	2 698	2 547	2 223	1 967
Income, net increases, total.....	11 \$ 5 620	\$ 5 869	\$ 6 868	\$ 4 863	\$ 4 628
Cattle.....	12 1 209	1 641	2 603	890	1 091
Dairy sales.....	13 512	465	413	393	351
Hogs.....	14 1 780	1 919	2 209	1 471	1 761
Sheep.....	15 102	120	212	77	149
Poultry and eggs.....	16 129	313	181	251	150
Farm products used in household.....	17 268	276	258	222	243
Feed and grain.....	18 983	513	228	900	352
AAA payments.....	19 547	551	663	517	474
Labor and miscellaneous.....	20 90	71	101	142	57
Expenses, net decreases, total.....	21 \$ 2 229	\$ 2 169	\$ 2 858	\$ 1 921	\$ 1 864
Farm improvements.....	22 336	366	421	279	324
Feed and grain.....	23 754	769	939	655	635
Machinery and equipment*.....	24 443	429	653	416	308
Hired labor.....	25 207	182	236	136	145
Crop expense.....	26 350	266	437	311	338
Taxes.....	27 139	157	172	124	114
Livestock and miscellaneous.....	28 3 391	\$ 3 700	\$ 4 010	\$ 2 942	\$ 2 764
Income less expenses.....	29 717	740	636	618	693
Unpaid labor.....	30 2 674	\$ 2 960	\$ 3 374	\$ 2 324	\$ 2 071
Net farm income.....	31 6.9	7.1	6.4	6.8	6.9
Rate earned on investment, percent.....	32 \$ 1 281	\$ 1 415	\$ 1 263	\$ 1 087	\$ 1 100
Labor and management earnings.....	33 2 687	2 716	3 080	2 182	2 021
Excess of sales over expenses.....	34 436	708	672	538	500
Increase in inventory.....	35 55	53	48	46	43
Number of farms included.....	36 251	225	304	218	256
Size of farm, acres.....	37 \$ 22.35	\$ 26.08	\$ 22.59	\$ 22.31	\$ 18.11
Gross receipts per acre.....	38 11.71	12.92	11.49	11.65	10.01
Total expenses per acre.....	39 \$ 10.64	\$ 13.16	\$ 11.10	\$ 10.66	\$ 8.10
Net receipts per acre.....	40 \$ 95	\$111	\$111	\$ 99	\$ 70
Value of land per acre.....	41 106	120	126	109	84
Value of improved land per acre.....	42 21	26	21	21	18
Value of improvements per acre.....	43 155	184	172	156	118
Total investment per acre.....	44 80.3	86.6	79.6	82.2	71.5
Percent of land area tillable.....	45 33.6	35.7	34.3	31.6	28.9
Percent of tillable land in.....	46 14.4	20.8	17.8	16.5	12.6
Corn.....	47 1.8	.9	4.0	2.4	9.5
Oats.....	48 10.7	3.8	7.4	8.7	9.1
Wheat.....	49 7.4	5.9	8.9	9.4	3.9
Soybeans for grain.....	50 20.3	22.3	20.7	21.9	23.1
Other cultivated crops.....	51 11.8	10.6	6.9	9.5	12.9
Legume hay and pasture.....	52 55.8	62.0	50.8	52.0	54.6
Nonlegume hay and pasture.....	53 42.0	58.9	56.3	51.1	51.3
Bushels per acre: Corn.....	54 28.9	27.6	26.2	27.0	29.1
Oats.....	55 23.5	20.1	19.4	21.4	18.6
Wheat.....	56 10.10	\$ 14.58	\$ 12.95	\$ 9.79	\$ 10.40
Soybeans.....	57 155	142	148	152	139
Feed fed per acre to livestock.....	58 2.38	3.39	2.62	2.91	2.74
Returns for \$100 feed fed.....	59 22.0	23.3	31.0	21.4	27.0
Poultry returns per hen.....	60 \$ 81	\$ 84	\$ 80	\$ 75	\$ 66
Number of litters farrowed.....	61 88	85	86	86	81
Returns per litter.....	62 \$ 5.31	\$ 5.77	\$ 5.37	\$ 5.38	\$ 5.29
Dairy returns per cow.....	63 6.66	7.12	6.19	6.46	6.56
Horse and machinery cost per crop acre.....	64 1.34	1.63	1.38	1.28	1.27
Labor cost per crop acre.....	65 1.39	1.18	1.44	1.43	1.32
Improvement cost per acre.....	66 1.34	1.63	1.38	1.28	1.27
Taxes per acre.....	67 1.39	1.18	1.44	1.43	1.32

*Includes farm share of automobile.

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—*Continued*

	Hancock	Mercer	Warren	Stark	Hender- son	McLean	Tazewell	Ford
1	\$29 283	\$37 972	\$43 144	\$39 241	\$33 920	\$62 664	\$47 257	\$44 014
2	18 276	22 237	26 025	25 233	19 072	41 340	31 025	31 185
3	3 831	4 559	5 878	4 533	4 022	7 137	5 610	3 886
4	323	399	442	230	433	320	336	372
5	1 926	2 895	2 539	1 587	3 018	2 951	1 887	1 483
6	775	930	1 157	966	1 052	1 007	618	285
7	65	74	148	473	166	157	180	53
8	58	82	79	77	70	91	87	98
9	2 222	4 598	4 261	3 503	3 563	6 520	4 855	4 166
10	1 807	2 198	2 615	2 639	2 524	3 141	2 659	2 486
11	\$ 4 886	\$ 6 554	\$ 6 387	\$ 5 817	\$ 6 121	\$ 7 523	\$ 6 619	\$ 5 293
12	1 355	2 323	2 100	851	2 420	2 084	1 272	1 027
13	328	405	302	380	172	555	762	249
14	1 613	1 984	2 348	1 873	2 336	1 960	1 207	717
15	70	97	138	332	189	164	306	70
16	104	181	169	179	135	200	219	230
17	230	254	243	240	236	231	257	205
18	680	627	448	1 371	.....	1 112	1 731	2 198
19	476	623	580	485	575	1 125	810	556
20	30	60	59	97	58	92	55	41
21	\$ 1 725	\$ 2 432	\$ 2 508	\$ 2 018	\$ 2 452	\$ 3 186	\$ 2 592	\$ 1 970
22	243	342	407	317	296	401	312	226
23	.....	.....	.....	.....	131	.....	.....	.....
24	587	789	920	709	877	1 045	877	765
25	417	577	507	386	477	761	578	333
26	111	186	207	152	185	304	221	176
27	273	392	321	343	332	499	413	376
28	94	146	146	111	154	176	191	94
29	\$ 3 161	\$ 4 122	\$ 3 879	\$ 3 799	\$ 3 669	\$ 4 337	\$ 4 027	\$ 3 323
30	628	685	669	713	694	592	633	680
31	\$ 2 533	\$ 3 437	\$ 3 210	\$ 3 086	\$ 2 975	\$ 3 745	\$ 3 394	\$ 2 643
32	8.7	9.1	7.4	7.9	8.8	6.0	7.2	6.0
33	\$ 1 564	\$ 2 065	\$ 1 578	\$ 1 711	\$ 1 831	\$ 1 098	\$ 1 551	\$ 1 020
34	1 864	2 548	3 681	3 716	2 177	4 176	3 886	2 702
35	1 067	1 320	-45	-166	1 256	-70	-116	416
36	32	31	28	28	24	62	60	58
37	248	276	254	232	266	308	257	259
38	\$ 19.68	\$ 23.79	\$ 25.15	\$ 25.05	\$ 22.98	\$ 24.39	\$ 25.71	\$ 20.43
39	9.48	11.31	12.51	11.76	11.81	12.25	12.53	10.23
40	\$ 10.20	\$ 12.48	\$ 12.64	\$ 13.29	\$ 11.17	\$ 12.14	\$ 13.18	\$ 10.20
41	\$ 74	\$ 81	\$102	\$109	\$ 72	\$134	\$121	\$120
42	85	91	108	111	84	139	128	120
43	15	17	23	20	15	23	22	15
44	118	138	170	169	127	203	184	170
45	74.4	70.5	83.7	88.8	73.6	89.2	85.3	94.8
46	23.1	35.9	37.1	37.3	33.1	35.9	31.2	36.3
47	10.3	12.5	16.3	17.5	14.0	13.5	14.0	21.8
48	9.4	.9	2.3	.9	5.6	4.0	9.8	.3
49	11.5	4.5	6.7	7.5	7.8	12.5	9.9	10.5
50	6.7	9.0	6.4	4.8	8.7	7.3	8.7	6.7
51	25.9	26.5	22.7	22.3	23.4	22.3	21.8	18.7
52	13.1	10.7	8.5	9.7	7.4	4.5	4.6	5.7
53	64.9	64.0	61.7	61.9	66.8	48.2	56.0	44.5
54	51.5	43.1	49.0	49.6	48.3	64.9	61.3	55.3
55	26.3	18.3	36.5	16.7	23.7	24.5	26.5	20.0
56	.....	.....	.....	.....	.....	.....	30.0	.....
57	24.3	22.8	20.3	22.9	22.5	20.0	24.1	14.1
58	\$ 9.16	\$ 11.71	\$ 14.95	\$ 11.28	\$ 14.42	\$ 11.43	\$ 9.44	\$ 6.50
59	160	161	138	145	141	145	162	146
60	2.04	2.60	2.66	2.90	2.50	3.05	3.23	2.55
61	18.0	25.5	29.0	23.6	27.0	27.9	16.9	10.6
62	\$ 75	\$ 77	\$ 64	\$ 83	\$ 86	\$ 80	\$ 73	\$ 70
63	63	91	79	81	72	108	128	72
64	\$ 5.22	\$ 6.03	\$ 6.25	\$ 4.93	\$ 6.30	\$ 5.22	\$ 5.61	\$ 4.28
65	7.41	7.91	6.54	6.44	6.88	5.74	6.42	4.81
66	.98	1.24	1.60	1.37	1.11	1.30	1.21	.87
67	1.10	1.42	1.26	1.48	1.25	1.62	1.60	1.45

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—*Continued*

Accounting item	Livingston	Woodford	LaSalle	Champaign	Iroquois
Capital investment, total..... 1	\$46 784	\$51 287	\$55 875	\$44 266	\$39 949
Land..... 2	31 364	33 754	35 842	32 349	27 028
Farm improvements..... 3	5 771	6 071	7 111	3 790	4 519
Horses..... 4	375	338	270	271	368
Cattle..... 5	1 510	2 110	2 809	1 043	1 267
Hogs..... 6	346	754	699	336	319
Sheep..... 7	184	167	122	66	160
Poultry..... 8	143	105	124	82	108
Feed and grain..... 9	4 393	5 294	5 905	3 870	3 753
Machinery and equipment*..... 10	2 698	2 694	2 993	2 459	2 427
Income, net increases, total..... 11	\$ 5 275	\$ 6 622	\$ 7 063	\$ 5 650	\$ 5 666
Cattle..... 12	1 104	1 573	1 937	615	911
Dairy sales..... 13	495	461	608	378	432
Hogs..... 14	720	1 484	1 306	686	728
Sheep..... 15	97	303	111	52	88
Poultry and eggs..... 16	443	263	261	238	268
Farm products used in household..... 17	267	279	259	205	219
Feed and grain..... 18	1 468	1 529	1 632	2 719	2 433
AAA payments..... 19	640	686	865	722	536
Labor and miscellaneous..... 20	41	44	84	35	51
Expenses, net decreases, total..... 21	\$ 2 180	\$ 2 596	\$ 2 882	\$ 2 154	\$ 2 191
Farm improvements..... 22	295	329	426	297	310
Feed and grain..... 23	777	841	966	865	741
Machinery and equipment*..... 24	398	577	621	347	416
Hired labor..... 25	215	203	309	158	214
Crop expense..... 26	343	493	389	396	396
Taxes..... 27	152	153	171	91	114
Livestock and miscellaneous..... 28	30	4 026	4 181	3 496	3 475
Income less expenses..... 29	658	658	683	616	770
Unpaid labor..... 30	31	3 368	3 498	2 880	2 705
Net farm income..... 31	\$ 2 437	\$ 3 368	\$ 3 498	\$ 2 880	\$ 2 705
Rate earned on investment, percent..... 32	5.2	6.6	6.3	6.5	6.8
Labor and management earnings..... 33	\$ 628	\$ 1 312	\$ 1 201	\$ 1 178	\$ 1 278
Excess of sales over expenses..... 34	2 766	3 929	3 278	3 018	2 670
Increase in inventory..... 35	62	-182	644	273	586
Number of farms included..... 36	57	53	51	47	44
Size of farm, acres..... 37	233	257	282	244	270
Gross receipts per acre..... 38	\$ 22.61	\$ 25.77	\$ 25.04	\$ 23.17	\$ 20.99
Total expenses per acre..... 39	12.16	12.66	12.64	11.36	10.97
Net receipts per acre..... 40	\$ 10.45	\$ 13.11	\$ 12.40	\$ 11.81	\$ 10.02
Value of land per acre..... 41	\$134	\$131	\$127	\$133	\$100
Value of improved land per acre..... 42	137	138	135	134	102
Value of improvements per acre..... 43	25	24	25	16	17
Total investment per acre..... 44	201	200	198	182	148
Percent of land area tillable..... 45	92.5	87.4	87.0	92.9	90.9
Percent of tillable land in.....					
Corn..... 46	35.7	32.8	37.4	32.2	31.9
Oats..... 47	22.7	20.3	20.9	9.4	16.4
Wheat..... 48	1.6	2.5	2.0	4.0	1.4
Soybeans for grain..... 49	8.2	5.5	5.8	23.9	14.2
Other cultivated crops..... 50	5.7	10.1	9.2	6.8	10.9
Legume hay and pasture..... 51	24.2	24.3	20.6	16.7	17.8
Nonlegume hay and pasture..... 52	1.9	4.5	4.1	7.0	7.4
Bushels per acre: Corn..... 53	39.5	55.1	52.1	55.1	52.8
Oats..... 54	58.6	61.9	63.2	59.8	54.5
Wheat..... 55	25.4	23.3	29.0	24.2	23.1
Barley..... 56			40.0		
Soybeans..... 57	16.8	20.7	17.9	21.6	18.5
Feed fed per acre to livestock..... 58	\$ 7.91	\$ 10.63	\$ 10.91	\$ 5.15	\$ 6.24
Returns for \$100 feed fed..... 59	165	156	143	169	154
Poultry returns per hen..... 60	3.48	2.80	2.86	2.90	2.81
Number of litters farrowed..... 61	10.6	18.8	20.0	9.9	9.8
Returns per litter..... 62	\$ 81	\$ 91	\$ 73	\$ 81	\$ 86
Dairy returns per cow..... 63	99	99	101	89	82
Horse and machinery cost per crop acre..... 64	\$ 5.24	\$ 5.47	\$ 5.07	\$ 5.10	\$ 4.31
Labor cost per crop acre..... 65	5.81	6.62	5.94	4.97	5.66
Improvement cost per acre..... 66	1.26	1.28	1.51	1.22	1.15
Taxes per acre..... 67	1.47	1.92	1.38	1.62	1.47

*Includes farm share of automobile.

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—*Continued*

	Vermilion	Macon	Sangamon	Kankakee	Menard	Will	DeWitt	Kendall
1	\$43 197	\$46 142	\$44 160	\$36 310	\$35 055	\$32 311	\$40 643	\$45 519
2	29 376	34 046	30 279	23 126	23 650	19 411	27 605	27 158
3	5 210	3 672	4 464	4 568	3 902	4 853	4 066	7 187
4	344	297	398	277	328	309	275	349
5	1 330	1 281	2 665	1 589	1 276	2 245	2 041	2 709
6	480	362	920	235	657	365	369	912
7	52	55	73	7	79	22	185	138
8	74	106	95	107	111	122	71	153
9	3 679	3 961	3 388	3 905	2 778	2 642	3 583	4 211
10	2 652	2 362	1 878	2 496	2 274	2 342	2 448	2 702
11	\$ 5 953	\$ 6 081	\$ 5 286	\$ 4 567	\$ 5 620	\$ 4 754	\$ 6 174	\$ 6 326
12	614	919	1 971	630	859	1 260	1 614	1 502
13	395	369	356	749	208	980	515	862
14	906	834	1 540	474	1 438	575	825	1 667
15	72	46	72	13	82	8	158	46
16	184	199	156	302	264	292	162	435
17	234	201	223	209	246	188	235	232
18	2 772	2 844	464	1 722	1 743	1 090	2 140	1 021
19	702	633	458	407	744	319	463	464
20	74	36	46	61	36	42	62	97
21	\$ 2 568	\$ 2 206	\$ 2 483	\$ 1 934	\$ 2 077	\$ 1 762	\$ 2 266	\$ 2 614
22	295	256	336	241	267	255	237	463
23	940	916	811	776	756	683	929	866
24	499	351	671	349	467	308	417	533
25	198	124	156	187	132	170	143	214
26	540	456	381	275	345	233	413	345
27	96	103	128	106	110	113	127	193
28								
29	\$ 3 385	\$ 3 875	\$ 2 803	\$ 2 633	\$ 3 543	\$ 2 992	\$ 3 908	\$ 3 712
30	697	727	544	760	666	765	728	715
31	\$ 2 688	\$ 3 148	\$ 2 259	\$ 1 873	\$ 2 877	\$ 2 227	\$ 3 180	\$ 2 997
32	6.2	6.8	5.1	5.2	8.2	6.9	7.8	6.6
33	\$ 1 078	\$ 1 400	\$ 514	\$ 624	\$ 1 629	\$ 1 184	\$ 1 655	\$ 1 295
34	3 081	3 097	2 474	2 610	2 539	2 328	3 062	3 214
35	70	577	106	-186	758	476	611	266
36	43	36	35	31	31	30	29	28
37	297	260	277	241	262	204	267	235
38	\$ 20.04	\$ 23.43	\$ 19.10	\$ 18.95	\$ 21.45	\$ 23.27	\$ 23.15	\$ 26.89
39	10.99	11.30	10.94	11.18	10.47	12.37	11.23	14.15
40	\$ 9.05	\$ 12.13	\$ 8.16	\$ 7.77	\$ 10.98	\$ 10.90	\$ 11.92	\$ 12.74
41	\$ 99	\$131	\$109	\$ 96	\$ 90	\$ 95	\$104	\$115
42	101	132	112	98	90	96	107	120
43	18	14	16	19	15	24	15	31
44	145	178	160	151	134	158	152	193
45	92.2	93.8	87.4	92.5	86.3	89.1	87.6	89.2
46	29.7	30.4	29.1	32.4	27.3	31.7	33.2	34.6
47	8.2	7.1	9.4	16.6	11.2	16.8	13.1	23.8
48	7.9	8.8	12.9	1.3	15.8	3.4	5.3	2.2
49	18.0	22.1	10.7	16.6	9.8	14.7	16.6	4.9
50	11.7	7.8	6.5	8.3	7.3	6.1	4.1	7.9
51	16.0	15.0	18.9	16.1	19.0	15.2	17.5	21.1
52	8.5	8.8	12.5	8.7	9.6	12.1	10.2	5.5
53	50.9	59.2	53.7	42.3	56.4	46.0	55.7	54.2
54	57.0	64.8	59.2	51.2	52.8	62.2	57.4	71.8
55	25.9	26.9	29.9	19.3	28.7	26.1	27.5	29.8
56	18.8	20.0	19.8	16.5	17.1	20.3	22.2	21.3
57	\$ 5.64	\$ 6.18	\$ 12.02	\$ 5.99	\$ 7.82	\$ 10.68	\$ 7.70	\$ 13.98
58	141	157	128	161	148	150	168	143
59	3.01	2.72	2.26	3.50	2.74	2.85	2.31	3.01
60	13.1	12.5	21.5	6.6	21.4	10.1	10.8	20.1
61	\$ 76	\$ 80	\$ 62	\$ 80	\$ 72	\$ 91	\$ 79	\$ 78
62	79	101	72	110	65	120	95	113
63								
64	\$ 4.64	\$ 5.09	\$ 5.17	\$ 4.92	\$ 4.95	\$ 5.13	\$ 5.30	\$ 5.60
65	5.13	5.10	6.19	5.80	5.98	6.52	5.52	6.64
66	.99	.99	1.21	1.00	1.02	1.25	.89	1.97
67	1.82	1.76	1.38	1.14	1.32	1.14	1.55	1.47

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—Continued

Accounting item	Edgar, Douglas, Coles	Moultrie, Piatt, Logan	Mason, Cass	Grundy	Morgan
Capital investment, total.....	1 \$49 744	\$47 372	\$32 979	\$49 150	\$36 389
Land.....	2 35 085	33 946	22 336	32 282	25 006
Farm improvements.....	3 4 640	4 215	3 241	6 292	3 425
Horses.....	4 325	386	443	363	354
Cattle.....	5 1 437	1 607	969	1 813	1 731
Hogs.....	6 645	372	434	415	733
Sheep.....	7 67	101	43	11	116
Poultry.....	8 95	92	95	137	80
Feed and grain.....	9 4 348	4 234	3 371	4 758	2 727
Machinery and equipment*.....	10 3 102	2 419	2 047	3 079	2 217
Income, net increases, total.....	11 \$ 6 580	\$ 6 150	\$ 5 252	\$ 6 509	\$ 5 927
Cattle.....	12 1 266	1 007	557	1 093	1 330
Dairy sales.....	13 265	422	205	869	368
Hogs.....	14 1 360	844	886	910	1 546
Sheep.....	15 55	64	36	10	128
Poultry and eggs.....	16 224	217	260	270	170
Farm products used in household.....	17 249	231	252	265	240
Feed and grain.....	18 2 494	2 697	2 389	2 192	1 460
AAA payments.....	19 599	633	635	863	626
Labor and miscellaneous.....	20 68	35	32	37	59
Expenses, net decreases, total.....	21 \$ 2 637	\$ 2 527	\$ 1 913	\$ 2 642	\$ 1 869
Farm improvements.....	22 331	285	207	403	237
Feed and grain.....	23 996	1 001	732	956	671
Machinery and equipment*.....	24 548	484	377	485	404
Hired labor.....	25 202	172	138	283	133
Crop expense.....	26 455	461	352	336	334
Taxes.....	27 105	124	107	179	90
Livestock and miscellaneous.....	28 3 943	\$ 3 623	\$ 3 339	\$ 3 867	\$ 4 058
Income less expenses.....	29 713	661	728	752	707
Unpaid labor.....	30 3 230	\$ 2 962	\$ 2 611	\$ 3 115	\$ 3 351
Net farm income.....	31 6.5	6.3	7.9	6.3	9.2
Rate earned on investment, percent.....	32 \$ 1 263	\$ 1 153	\$ 1 502	\$ 1 220	\$ 2 045
Labor and management earnings.....	33 3 483	2 895	2 604	3 428	2 556
Excess of sales over expenses.....	34 211	497	483	174	1 262
Increase in inventory.....	35 59	59	52	19	42
Number of farms included.....	36 309	290	309	293	266
Size of farm, acres.....	37 \$ 21.29	\$ 21.21	\$ 16.97	\$ 22.19	\$ 22.26
Gross receipts per acre.....	38 10.84	10.99	8.54	11.57	9.68
Total expenses per acre.....	39 \$ 10.45	\$ 10.22	\$ 8.43	\$ 10.62	\$ 12.58
Net receipts per acre.....	40 \$114	\$117	\$ 72	\$110	\$ 94
Value of land per acre.....	41 117	120	76	116	101
Value of improved land per acre.....	42 15	15	10	21	13
Value of improvements per acre.....	43 161	163	107	168	137
Total investment per acre.....	44 90.0	91.1	84.8	85.4	83.7
Percent of land area tillable.....	45 28.1	27.9	26.9	37.0	28.9
Percent of tillable land in—	46 6.5	8.5	10.4	19.8	8.9
Corn.....	47 8.1	9.3	21.1	.6	18.4
Oats.....	48 22.3	21.1	5.8	11.6	9.2
Wheat.....	49 7.5	8.0	12.2	12.3	5.7
Soybeans for grain.....	50 16.4	16.6	18.0	17.0	19.2
Other cultivated crops.....	51 11.1	8.6	5.6	1.7	9.7
Legume hay and pasture.....	52 62.0	60.2	48.6	44.1	56.2
Nonlegume hay and pasture.....	53 59.4	63.2	46.1	61.6	52.8
Bushels per acre: Corn.....	54 23.5	27.7	26.7	20.7	29.1
Oats.....	55 20.8	22.7	17.1	18.4	20.9
Wheat.....	56 7.75	6.68	4.74	6.84	9.17
Soybeans.....	57 140	141	146	167	152
Feed fed per acre to livestock.....	58 3.03	2.59	2.75	3.00	2.51
Returns for \$100 feed fed.....	59 18.3	12.3	11.8	15.1	19.7
Poultry returns per hen.....	60 \$ 84	\$ 73	\$ 67	\$ 76	\$ 81
Number of litters farrowed.....	61 77	96	68	125	89
Returns per litter.....	62 \$ 4.96	\$ 5.30	\$ 4.24	\$ 4.85	\$ 4.35
Dairy returns per cow.....	63 5.48	5.18	5.00	5.30	5.81
Horse and machinery cost per crop acre.....	64 1.07	.98	.67	1.37	.89
Labor cost per crop acre.....	65 1.47	1.59	1.14	1.15	1.25
Improvement cost per acre.....	66 1.47	1.59	1.14	1.15	1.25
Taxes per acre.....	67 1.47	1.59	1.14	1.15	1.25

*Includes farm share of automobile.

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—Continued

	Macoupin	Shelby	Christian	Montgomery	Adams	Scott, Greene, Jersey	Pike, Brown, Schuyler	Madison
1	\$26 648	\$25 084	\$33 699	\$21 278	\$25 592	\$31 078	\$26 027	\$17 800
2	15 093	16 366	22 654	12 955	14 755	18 567	15 255	9 443
3	4 208	2 662	3 540	2 448	4 090	3 984	3 771	2 802
4	422	284	309	395	363	435	373	409
5	1 944	1 090	1 481	1 372	1 529	2 196	1 872	1 294
6	396	253	520	601	644	623	985	256
7	126	121	75	179	150	101	82	27
8	102	108	100	89	70	87	52	111
9	2 189	2 290	2 836	1 751	2 047	2 873	1 959	1 656
10	2 168	1 910	2 184	1 488	1 944	2 212	1 678	1 802
11	\$ 4 928	\$ 4 322	\$ 4 754	\$ 4 049	\$ 4 142	\$ 5 620	\$ 4 598	\$ 3 782
12	1 096	497	1 108	955	1 112	1 261	1 388	487
13	871	693	303	371	294	902	136	1 271
14	845	623	1 099	1 135	1 384	1 373	2 275	439
15	112	103	65	98	98	65	85	27
16	281	216	156	161	160	190	116	251
17	247	242	243	260	244	252	227	226
18	1 069	1 514	1 335	667	475	960	...	706
19	297	380	402	349	336	584	302	293
20	110	54	43	43	39	33	69	82
21	\$ 1 694	\$ 1 439	\$ 1 932	\$ 1 369	\$ 1 634	\$ 2 175	\$ 2 074	\$ 1 143
22	255	204	262	176	254	292	204	169
23	...	...	...	...	...	...	578	...
24	640	510	736	544	548	764	445	409
25	365	235	386	244	348	491	361	239
26	113	134	127	92	116	151	109	87
27	244	275	324	229	283	351	263	157
28	77	81	97	84	85	126	114	82
29	\$ 3 234	\$ 2 883	\$ 2 822	\$ 2 680	\$ 2 508	\$ 3 445	\$ 2 524	\$ 2 639
30	946	695	747	800	772	806	682	703
31	\$ 2 288	\$ 2 188	\$ 2 075	\$ 1 880	\$ 1 736	\$ 2 639	\$ 1 842	\$ 1 936
32	8.6	8.7	6.2	8.8	6.8	8.5	7.1	10.9
33	\$ 1 505	\$ 1 474	\$ 912	\$ 1 372	\$ 993	\$ 1 619	\$ 1 081	\$ 1 490
34	1 414	1 909	2 255	1 827	1 273	2 341	1 746	1 699
35	1 573	732	324	593	991	852	551	714
36	39	34	33	30	29	62	47	72
37	265	232	229	221	259	271	271	166
38	\$ 18.57	\$ 18.60	\$ 20.75	\$ 18.29	\$ 15.98	\$ 20.72	\$ 16.99	\$ 22.84
39	9.95	9.18	11.69	9.80	9.28	10.99	10.18	11.15
40	\$ 8.62	\$ 9.42	\$ 9.06	\$ 8.49	\$ 6.70	\$ 9.73	\$ 6.81	\$ 11.69
41	\$ 57	\$ 70	\$ 99	\$ 59	\$ 57	\$ 68	\$ 56	\$ 57
42	60	74	100	63	64	77	58	59
43	16	11	15	11	16	15	14	17
44	100	108	147	96	99	115	96	107
45	78.0	86.9	92.6	84.2	74.5	79.3	69.0	78.9
46	22.5	25.6	23.9	21.9	21.9	27.5	25.3	21.0
47	10.0	5.6	4.7	7.8	12.6	5.0	13.0	7.1
48	15.1	6.6	11.4	15.0	12.0	17.8	6.4	24.0
49	6.0	15.5	27.0	14.4	9.6	3.2	4.0	1.4
50	9.6	8.4	6.3	9.8	6.4	9.8	6.3	11.9
51	21.4	22.0	15.4	17.9	25.3	26.6	31.2	24.6
52	15.4	16.3	11.3	13.2	12.2	10.1	13.8	10.0
53	54.0	55.4	59.3	55.8	49.0	54.2	46.6	53.3
54	51.3	45.6	56.4	47.9	46.0	44.5	46.5	42.7
55	27.7	20.4	26.6	24.1	27.4	24.7	20.8	26.3
56	...	...	...	...	...	...	...	...
57	20.4	19.5	22.5	23.5	20.3	19.3	17.2	20.6
58	\$ 8.18	\$ 5.87	\$ 9.46	\$ 9.07	\$ 8.39	\$ 9.40	\$ 10.24	\$ 8.77
59	156	169	134	145	148	156	150	182
60	2.98	2.14	2.03	1.98	2.54	2.77	2.17	2.29
61	14.1	9.5	14.3	11.5	15.1	19.8	27.8	7.8
62	\$ 73	\$ 77	\$ 80	\$ 70	\$ 68	\$ 75	\$ 86	\$ 66
63	111	93	79	77	71	115	58	122
64	\$ 4.64	\$ 3.97	\$ 5.03	\$ 4.59	\$ 4.87	\$ 6.06	\$ 4.71	\$ 5.35
65	7.71	5.80	6.46	6.75	7.83	8.19	7.92	8.49
66	.96	.88	1.14	.79	.98	1.08	.75	1.02
67	.92	1.18	1.41	1.03	1.09	1.29	.97	.95

(Continued)

TABLE 13. SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—Continued

Accounting item	Randolph	St. Clair	Monroe	Bond, Clinton, Washington	
Capital investment, total	1	\$14 751	\$21 523	\$17 719	\$19 271
Land	2	7 683	12 604	10 915	10 279
Farm improvements	3	2 496	3 428	2 135	2 841
Horses	4	509	553	372	358
Cattle	5	1 087	903	582	1 261
Hogs	6	191	305	245	418
Sheep	7	30	19	12	71
Poultry	8	87	155	160	150
Feed and grain	9	1 301	1 738	1 581	1 800
Machinery and equipment*	10	1 367	1 818	1 717	2 093
Income, net increases, total	11	\$ 3 150	\$ 3 704	\$ 3 722	\$ 3 466
Cattle	12	625	361	207	482
Dairy sales	13	710	725	474	1 082
Hogs	14	322	545	371	811
Sheep	15	36	11	21	61
Poultry and eggs	16	250	384	564	280
Farm products used in household	17	258	279	272	248
Feed and grain	18	551	977	1 446	108
AAA payments	19	337	360	303	343
Labor and miscellaneous	20	61	62	64	51
Expenses, net decreases, total	21	\$ 1 099	\$ 1 408	\$ 1 293	\$ 1 363
Farm improvements	22	175	190	144	216
Feed and grain	23				
Machinery and equipment*	24	437	557	518	530
Hired labor	25	191	245	283	290
Crop expense	26	84	102	81	82
Taxes	27	163	216	176	166
Livestock and miscellaneous	28	49	98	91	79
Income less expenses	29	\$ 2 051	\$ 2 296	\$ 2 429	\$ 2 103
Unpaid labor	30	692	732	751	616
Net farm income	31	\$ 1 359	\$ 1 564	\$ 1 678	\$ 1 487
Rate earned on investment, percent	32	9.2	7.3	9.5	7.7
Labor and management earnings	33	\$ 1 049	\$ 927	\$ 1 242	\$ 940
Excess of sales over expenses	34	1 240	1 337	1 741	1 674
Increase in inventory	35	553	680	416	181
Number of farms included	36	35	31	27	52
Size of farm, acres	37	215	209	201	209
Gross receipts per acre	38	\$ 14.66	\$ 17.72	\$ 18.55	\$ 16.57
Total expenses per acre	39	8.33	10.24	10.19	9.46
Net receipts per acre	40	\$ 6.33	\$ 7.48	\$ 8.36	\$ 7.11
Value of land per acre	41	\$ 36	\$ 60	\$ 54	\$ 49
Value of improved land per acre	42	39	65	63	53
Value of improvements per acre	43	12	16	11	14
Total investment per acre	44	69	103	88	92
Percent of land area tillable	45	82.4	81.4	79.8	80.7
Percent of tillable land in—					
Corn	46	11.8	17.8	16.0	17.7
Oats	47	10.2	10.5	5.4	9.8
Wheat	48	25.5	27.0	34.1	20.8
Soybeans for grain	49	1.1	3.2	.9	3.4
Other cultivated crops	50	13.4	15.1	12.6	12.1
Legume hay and pasture	51	31.9	20.5	26.6	24.8
Nonlegume hay and pasture	52	6.1	5.9	4.4	11.4
Bushels per acre: Corn	53	42.5	46.4	51.4	41.9
Oats	54	38.4	41.5	44.3	39.3
Wheat	55	21.6	23.6	25.8	21.8
Barley	56				
Soybeans	57	10.0	14.3	14.0	13.4
Feed fed per acre to livestock	58	\$ 6.38	\$ 6.35	\$ 5.69	\$ 9.23
Returns for \$100 feed fed	59	155	168	160	150
Poultry returns per hen	60	2.42	2.68	3.02	1.82
Number of litters fattowed	61	5.9	7.7	6.7	9.4
Returns per litter	62	\$ 63	\$ 92	\$ 66	\$ 89
Dairy returns per cow	63	101	107	94	114
Horse and machinery cost per crop acre	64	\$ 4.66	\$ 5.61	\$ 5.65	\$ 5.29
Labor cost per crop acre	65	6.72	6.83	8.29	6.84
Improvement cost per acre	66	.81	.91	.72	1.03
Taxes per acre	67	.76	1.03	.88	.79

*Includes farm share of automobile.

(Concluded)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 2,738 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1940—*Concluded*

	Effingham, Fayette	Jefferson	Clark, Jasper, Crawford	Williamson, Richland, Marion, Franklin, Hamilton, Clay	Edwards	Gallatin, Lawrence, Saline, Wabash, White	Jackson- Perry, Alexander- Pulaski, Pope-Hardin, Johnson, Massac, Union
1	\$14 839	\$ 9 483	\$17 944	\$13 397	\$11 911	\$20 469	\$11 733
2	7 443	4 809	10 046	6 879	7 173	12 883	5 907
3	2 475	1 541	2 792	2 070	1 369	2 647	2 323
4	392	404	315	403	282	400	375
5	1 373	623	1 097	1 131	612	897	786
6	158	243	397	252	253	294	172
7	103	98	75	149	80	81	35
8	154	102	159	116	139	122	86
9	1 356	779	1 487	1 010	933	1 439	843
10	1 385	884	1 576	1 387	1 070	1 706	1 206
11	\$ 3 300	\$ 1 650	\$ 3 528	\$ 2 574	\$ 2 500	\$ 3 732	\$ 2 320
12	670	256	678	507	360	510	377
13	672	151	270	420	89	217	364
14	227	431	939	468	509	713	299
15	135	87	89	117	61	70	39
16	345	189	434	275	308	207	177
17	254	227	248	253	215	207	220
18	682	179	516	204	576	1 422	584
19	263	89	291	263	342	337	243
20	52	41	63	67	40	49	17
21	\$ 1 087	\$ 664	\$ 1 249	\$ 951	\$ 938	\$ 1 447	\$ 974
22	180	123	160	148	118	228	50
23	407	227	482	352	334	589	395
24	161	85	224	153	158	211	249
25	74	80	104	117	107	122	96
26	145	101	187	143	161	237	147
27	120	48	92	38	60	60	37
28	\$ 2 213	\$ 986	\$ 2 279	\$ 1 623	\$ 1 562	\$ 2 285	\$ 1 346
29	682	544	647	646	527	610	530
30	\$ 1 531	\$ 442	\$ 1 632	\$ 977	\$ 1 035	\$ 1 675	\$ 816
31	10.3	4.7	9.1	7.3	8.7	8.2	7.0
32	\$ 1 218	\$ 326	\$ 1 178	\$ 699	\$ 849	\$ 1 077	\$ 603
33	1 472	586	1 585	887	936	1 548	612
34	487	173	446	483	411	530	514
35	38	27	37	34	25	32	55
36	232	192	261	278	182	262	234
37	\$ 14.20	\$ 8.61	\$ 13.51	\$ 9.27	\$ 13.77	\$ 14.24	\$ 9.93
38	7.61	6.30	7.26	5.75	8.07	7.85	6.44
39	\$ 6.59	\$ 2.31	\$ 6.25	\$ 3.52	\$ 5.70	\$ 6.39	\$ 3.49
40	\$ 32	\$ 25	\$ 38	\$ 25	\$ 39	\$ 49	\$ 25
41	36	26	41	26	40	52	29
42	11	8	11	7	8	10	10
43	64	49	69	48	66	78	50
44	79.6	81.9	80.3	80.6	86.7	86.1	73.6
45	20.2	17.3	25.0	15.4	22.8	25.7	16.0
46	8.3	5.9	5.3	4.8	8.1	3.5	3.3
47	7.6	9.3	11.6	6.3	13.5	19.2	9.1
48	6.4	.5	2.9	2.2	3.0	5.7	1.2
49	10.7	11.1	13.0	16.6	14.7	14.1	13.0
50	22.8	25.9	21.8	26.8	20.8	22.8	35.6
51	24.0	30.0	20.4	27.9	17.1	9.0	21.8
52	43.7	25.2	44.9	24.7	35.3	44.4	38.2
53	37.7	28.0	37.7	31.2	47.3	32.2	32.1
54	21.0	21.4	19.4	18.9	22.5	20.3	17.8
55	13.6	11.3	13.3	7.1	11.3	8.5	.....
56	\$ 5.28	\$ 4.28	\$ 6.60	\$ 4.42	\$ 5.99	\$ 5.15	\$ 3.73
57	181	156	150	160	136	139	162
58	2.31	2.25	2.72	1.89	1.95	2.12	2.47
59	4.6	8.4	13.0	6.8	8.8	10.9	5.3
60	\$ 71	\$ 68	\$ 83	\$ 77	\$ 71	\$ 72	\$ 72
61	97	55	70	76	55	70	78
62	\$ 4.15	\$ 3.89	\$ 3.91	\$ 3.31	\$ 4.16	\$ 4.22	\$ 5.20
63	6.17	6.59	5.50	5.39	5.83	4.71	7.65
64	.77	.64	.61	.53	.65	.87	.21
65	.62	.53	.72	.52	.89	.90	.53

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural income ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period . . .	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	107	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	87	68	75
1932	65	48	41	69	43	43	62	68	47	58
1933	66	51	45	71	49	51	72	63	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	77	74	87
1936	81	81	86	80	74	82	103	90	86	103
1937	86	86	96	84	80	87	103	95	102	113
1938	79	69	69	80	72	81	101	88	78	88
1939	77	65	65	78	72	81	97	93	92	108
1940	78	68	69	79	78	90	113	98	105	122
1940 June	78	66	65	80	70	71	89	97	100	121
July	78	66	67	79	71	72	90	98	98	121
Aug.	77	66	69	79	71	80	101	99	106	121
Sept.	78	66	72	79	76	84	106	100	112	125
Oct.	79	66	72	79	80	98	124	100	116	129
Nov.	80	68	73	79	80	101	128	102	116	132
Dec.	80	70	74	79	86	105	131	104	122	138
1941 Jan.	80	72	78	80	86	90	112	104	121	139
Feb.	81	71	76	80	84	88	110	106	127	141
Mar.	82	72	76	80	88	94	118	106	131	143
Apr.	83	74	82	80	93	100	124	106	135	140
May	85	76	83	81	97	...	...	109 ¹¹	142	149 ¹¹
June	87 ¹¹	82 ¹¹	87 ¹¹	...	...	...	...	...	...	...

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			June 1940	Current months		
	1924-29	1939	1940		April	May	June
Corn, bu.....	\$.81	\$.43	\$.56	\$.59	\$.61	\$.66	\$.68
Oats, bu.....	.42	.28	.32	.30	.36	.34	.33
Wheat, bu.....	1.30	.67	.81	.74	.83	.88	.90
Barley, bu.....	.66	.41	.46	.44	.50	.50	.50
Soybeans, bu.....	1.94	.74	.82	.73	1.08	1.20	1.25
Hogs, cwt.....	9.97	6.56	5.54	4.80	8.30	8.40	9.30
Beef cattle, cwt.....	8.57	8.18	8.84	8.30	9.90	9.60	9.90
Lambs, cwt.....	12.22	8.18	8.52	8.90	10.50	10.00	10.20
Milk cows, head.....	78.00	63.00	65.00	69.00	74.00	75.00	80.00
Veal calves, cwt.....	11.27	9.15	9.63	8.70	10.50	10.50	10.20
Sheep, cwt.....	6.52	3.44	3.44	3.05	4.95	4.90	4.35
Butterfat, lb.....	.42	.23	.27	.24	.33	.34	.34
Milk, cwt.....	2.32	1.59	1.67	1.40	1.75	1.85	1.90
Eggs, doz.....	.30	.16	.17	.13	.19	.19	.22
Chickens, lb.....	.21	.13	.13	.14	.16	.16	.16
Wool, lb.....	.36	.25	.30	.30	.35	.40	.40
Apples, bu.....	1.59	1.07	1.14	1.50	1.20	1.20	1.25
Hay, ton.....	13.88	6.05	6.68	6.20	8.30	8.30	7.40
Potatoes, bu.....	1.39	.80	.83	1.10	.80	.75	.95

¹²For sources of data in tables see page 83.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

August, 1941

Number 75

ADJUSTING WAGES TO CHANGES IN COST OF LIVING

Regardless of one's opinion as to the future of price changes, two facts of importance are: (1) The present level of wholesale prices of all commodities is around 15 percent higher in August, 1941, than it was in August, 1939, and (2) the cost of living for urban wage-earners is now around 7 percent higher than it was in August, 1939. Changes in prices of basic commodities, all commodities, foods, and industrial products were discussed by E. J. Working in *Illinois Farm Economics* for June, 1941. Changes in the cost of living for 1914 to 1922 and 1939 to date are shown in Figure 1.

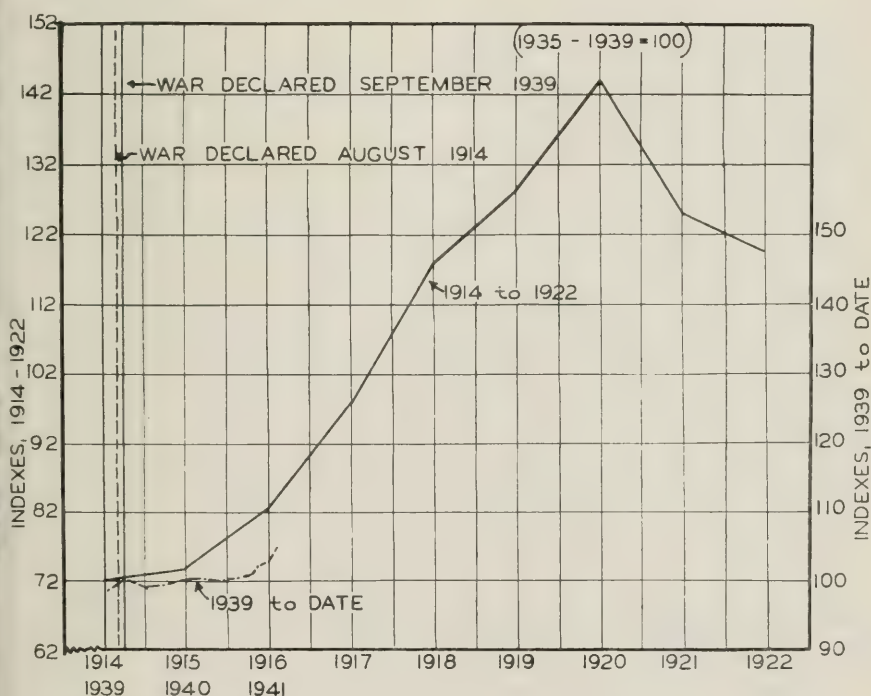


FIG. 1.—CHANGES IN COST OF LIVING IN 33 CITIES IN THE UNITED STATES, 1914-1922, AND 1939 TO DATE (1935-1939 = 100)

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

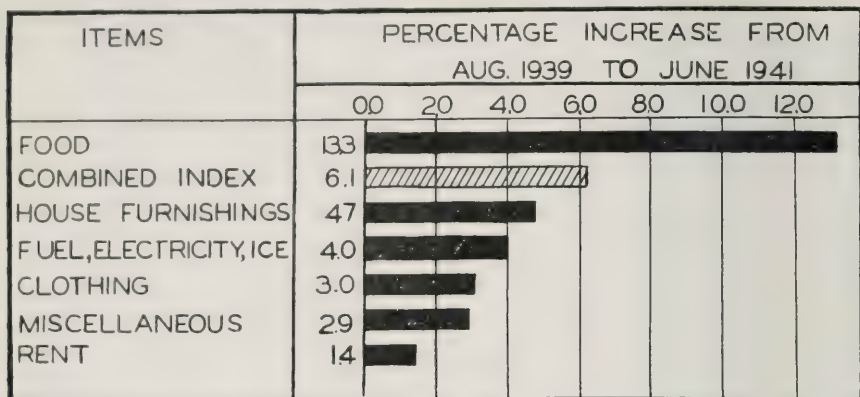


FIG. 2.—INCREASES IN COST-OF-LIVING IN 34 LARGE CITIES OF THE UNITED STATES FROM AUGUST, 1939 TO JUNE, 1941

What about living costs during the next year or two? Present indications are that living costs will rise substantially as purchasing power becomes greater in relation to the volume of goods available for sale. However, with governmental curbs on prices and the diversion of purchasing power, these costs will probably not rise as high as they did in World War I (Fig. 1). For them to rise as high, most things—food, clothing, and rent—would have to double in price, since living costs in 1920 were about twice as high as those in 1914.

Variations in cost-of-living increases. Changes in costs of different kinds of goods purchased by urban workers from August, 1939, to June, 1941, are shown in Figure 2. Prices of food have risen the most, and in June, 1941, they were 13.3 percent higher than in August, 1939. Prices of fuel, electricity, and ice were 4.0 percent higher; clothing, 3.0 percent higher; and house furnishings, 4.7 percent higher. Rent increased the least, being only 1.4 percent higher in June, 1941, than in August, 1939.

Increases in the cost of living vary from city to city. Buffalo has had the greatest increase in costs of goods purchased by city people since August, 1939, (8.9 percent), and living costs in Kansas City have risen the least (3.2 percent). Living costs have risen most in cities most active in producing defense materials.

Pressure for higher wages resulting from higher living costs. Entirely aside from the problem of higher wages resulting from the improved demand for labor is the pressure for higher wages resulting from rising living costs. One reason is that the wages and salaries of

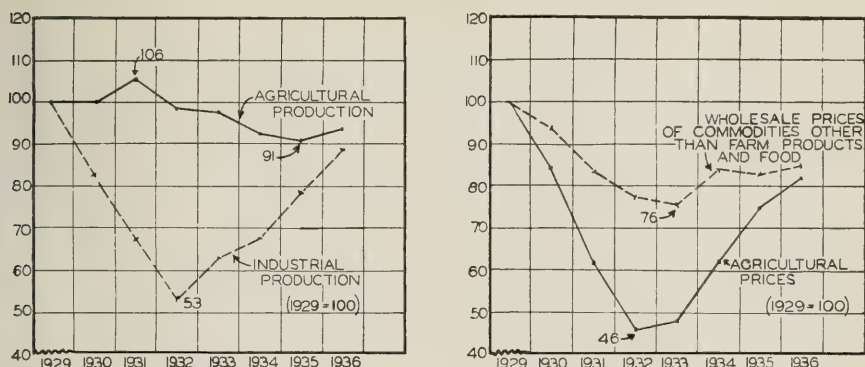


FIG. 3.—CHANGES IN PRODUCTION AND WHOLESALE PRICES OF AGRICULTURAL AND INDUSTRIAL PRODUCTION, 1929 TO 1936 (1929 = 100)

about two-thirds¹ of the nonagricultural workers in the country have risen less than those of factory workers since the outbreak of the war in September, 1939. In some cases the former group has received no wage increases. These workers include those engaged in trade and transportation, clerical service, teaching, domestic and personal service, and public utilities.

The largest wage increases in the past year or two have been paid factory workers engaged in the production of airplanes, ships, tanks, munitions, and other defense industries. In spite of these wage increases, however, those who have obtained them desire to consolidate these gains and prevent them from being absorbed by higher living costs. This situation constitutes another pressure for higher wages which will become increasingly greater as living costs continue to rise.

Maladjustments between agricultural income and nonagricultural income. What relation, if any, will exist between rising wage rates and agriculture during the post-defense period? Can anything be done to avoid a depression after our present defense program has run its course? Answers to these questions necessitate some analysis of the causes of maladjustments.

One basic cause for maladjustment between agriculture and industry is the rigidity of industrial prices, on the one hand, and the flexibility of farm prices, on the other hand. In the 1932 depression, for example, agricultural prices declined 54 percent and farm production, only one

¹According to the *Survey of Current Business*, the total number of nonagricultural workers in the United States in June, 1941, was 38,790,000, of whom only 11,757,000 or 30 percent, were factory workers.

TABLE 1. — RELATIVE DECLINE IN WHOLESALE PRICES AND PRODUCTION OF SPECIFIC COMMODITIES, 1929 TO SPRING OF 1933^a

Commodity	Percent of drop in	
	Wholesale prices	Production
Agricultural implements	15	80
Motor vehicles	16	80
Cement	18	65
Iron and steel	20	83
Auto tires	33	70
Textile products	45	30
Food products	49	14
Leather	50	20
Petroleum	56	20
Agricultural commodities	63	6

^aMeans, Gardiner C., "Industrial Prices and Their Relative Inflexibility," 74th Congress, First Session. Senate Document 13, 1935, p. 8.

percent and even with the drouth, dropped only 9 percent (Fig. 3). During this same period, industrial prices fell only 24 percent, while industrial production decreased 47 percent. The extremes of flexibility and rigidity in prices and production of specific commodities are shown in Table 1.

The changes in agricultural income and nonagricultural income during the past decade are shown in Figure 4. The per capita income of people not engaged in agriculture since 1924-1929 has been high com-

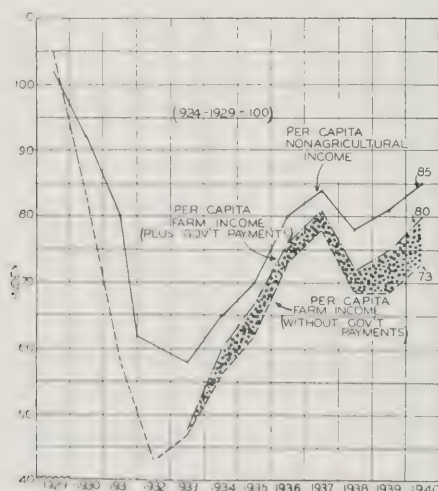


FIG. 4. — CHANGES IN PER CAPITA FARM INCOME WITH AND WITHOUT GOVERNMENT PAYMENTS, AND IN PER CAPITA NONAGRICULTURAL INCOME, 1929 TO 1940 (1924-1929 = 100)

pared with the per capita income of farm people, even when government payments are included with the farm income. Thus, in 1940, the per capita nonagricultural income was 85 percent of the 1924-1929 average compared with 73 percent, the index of the per capita income from farm marketings.¹ With government payments included, the per capita farm income in 1940 was 80 percent of the earlier period.

Analyzed from the viewpoint of past experience, the decline in prices after the defense program has run its course will probably put farm income still farther out of line with nonagricultural income—that is, unless definite steps are taken to prevent further maladjustments. To this end most economists agree that greater flexibility in industrial prices would be desirable.

The possibility of greater flexibility for industrial prices. One of the most practical ways to avoid a depression following our present defense program would be to produce more peace-time goods at lower costs and at lower prices.

The two policies which seem to be the most helpful in attaining this objective are: (1) continued anti-trust action by the Department of Justice, both during and following the defense program and (2) the introduction of some mechanism which will aid in eliminating strife between employees and employers by automatically adjusting wages with economic trends. This will get around some of the rigidity which causes maladjustments.

Probably the most important single factor that is contributing and will continue to contribute toward greater flexibility of industrial prices is vigorous enforcement of the anti-trust laws. The activities of the anti-trust division of the Department of Justice in relation to aluminum, chemicals, finance, eye glasses, glass containers, organized medicine, gasoline, fertilizer, milk, meat, sugar, and many other commodities and services have been reviewed by its chief.² At present, this division is making nation-wide investigations of the food industries and the industries most closely associated with defense. The beneficial results to producers and consumers of the Chicago milk investigations of the anti-trust division have been reported in a University of Illinois publication.³

¹Income from farm marketings is used as a measure of farm income per person even though it includes expenses incurred in farm production as well as the labor income of the farmer. Nonagricultural income does not include production expenses.

²Arnold, Thurman W., *The Bottlenecks of Business*, Reynolds and Hitchcock, 1940.

³University of Illinois Extension Service in Agriculture and Home Economics, AE-1324, 1940, pp. 6-11.

Automatic adjustment of wages to changes in cost of living.

Wages are the largest single item entering into the cost of producing and marketing goods. This fact becomes apparent if the costs are traced from the farm or mine to factory, to jobber, and to retail distributor. Consequently, if greater flexibility in industrial costs and prices is to be achieved, wages must become more flexible.

Three types of wage plans have been used in the United States for automatically adjusting wages to changes in economic trends. Under these plans, wages are adjusted upward or downward with changes in cost of living, changes in prices of given commodities, or changes in profits. Of these three, probably the plan under which wages change automatically with changes in the cost of living is the most practical for industries generally. The purpose of this plan is to maintain wages at a level which will buy a fixed amount of goods and services. This is effected by gearing wages to a cost-of-living index computed by the United States Department of Labor. Arguments for this plan are that the stability of wages resulting from its use aids in increasing the worker's security of purchasing power and probably leads to fuller employment. Stability of purchasing power is beneficial to employers as well as to employees.

To what extent are wages already automatically geared to changes in the cost of living? Several organizations in the United States and England have adopted this method to insure their workers that they can buy the same amount of goods and services during a period of rapidly changing prices.

In the United States the most widespread use of the sliding wage scale is by locals affiliated with the International Ladies' Garment Workers' Union. This union consists of around 300 locals having a total membership of about 270,000.

In September, 1939 the union recommended to its affiliated locals the policy of adjusting wages to changes in the cost of living with the understanding that wages would not go below the wages in effect at the time of adoption but that wages would be adjusted correspondingly with each increase or decrease in living costs. The sliding wage scale recommended by the union provides that wages shall vary with living costs but that no upward or downward adjustment shall be made until changes reach 5 percent of the former level. As far back as 1936 a similar provision has been included in the contract of the United Steel Corporation.¹

The following proposal was recommended by the International Ladies'

¹"How Index Numbers Affect Wages," *Steel*, Vol. 99, November 16, 1936, pp. 23-24.

Garment Workers' Union to its 300 locals in September, 1939, and, since that time, has been included in most wage agreements of the member locals with only minor variations:

"In view of unsettled economic conditions which are apt to result in violent changes in the cost of living, it is hereby agreed:

"That the price rates paid to piece workers and hourly wages paid to week workers shall be revised periodically in accordance with the changes in the cost of living as computed and published by the United

States Department of Labor { for the city of
for the United States.

"That whenever the cost of living index registers a change equal to or exceeding five percent since the last published figure prior to the signing of the agreement, an automatic change in the price rates or wages shall be instituted on the date one month following the publication of the index by the Department of Labor;

. . . . "War brings with it rapid changes in the cost of living (between 1916 and 1919 it went up by 59 percent). Under such conditions manufacturers can obtain better prices for their products and can, as a result, pay higher wages to their workers. The proposed clause, however, provides for automatic downward readjustments in the wages should the cost of living decline;¹

In England, wages for employees in the electrical cable business and steel construction, electrical contracting, civil engineering, and furniture-making industries are adjusted upward or downward with changes in the cost of living.² In general, basic wage rates move up or down 1/2 pence (1 cent) an hour for each change of 5 to 7 1/2 points in the government's cost-of-living index. In the furniture trade for skilled workers, a change of 1/2 pence per hour is made for each change up or down of 6 1/2 points in the index; the scale for women workers shifts 1/2 pence for each variation of 11 points; and the wages of unskilled workers change 1/2 pence per hour for each 9 points' change.

Flexible wages for employees of an Illinois cooperative. Recently, a cooperative farm organization in Illinois arranged to adjust wages of its employees to changes in the cost of living. For each change of 2 1/2 points in the U. S. Bureau of Labor Statistics' cost-of-living index, wages are to be changed 2 1/2 percent of the basic wage. Under this arrangement, the company guarantees that wages will not be reduced below the basic wage in effect July 1, 1941.

¹From letter of David Dubinsky, President-General Secretary of the International Ladies' Garment Workers' Union, to Affiliated Local Unions and Joint Boards, dated September 7, 1939.

²"How the Sliding Wage Scales Work," *Business Week*, March 12, 1938, p. 18.

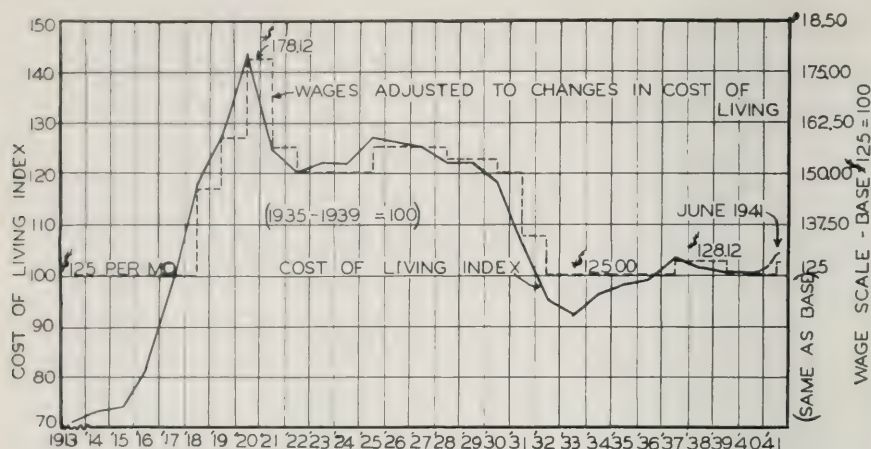


FIG. 5.—CHANGES IN COST OF LIVING, 1913 TO 1941, (1935-1939 = 100), AND WAGE SCALE OF \$125 PER MONTH ADJUSTED UPWARD OR DOWNWARD $2\frac{1}{2}$ PERCENT FOR EACH CHANGE OF $2\frac{1}{2}$ POINTS ABOVE OR BELOW THE COST OF LIVING INDEX OF 100

The Bureau of Labor Statistics' index is based on living costs¹ of a family of five and on price changes in 33 cities. For example, for a change of $2\frac{1}{2}$ points in the cost-of-living indexes it is assumed that wages would change $2\frac{1}{2}$ percent. For the purpose of illustration, the wages of a family receiving \$125 a month have been adjusted to changes in the cost of living during the period 1913 to date (Fig. 5 and Table 2). The data show a change in wages from \$125 a month up to \$178.12 a month in 1920 when living costs were at their peak. In this illustration, downward adjustments were made automatically as living costs declined. Wages were not reduced below the base wage of \$125 per month, nor were they reduced until living costs had declined $2\frac{1}{2}$ points.

The Bureau of Labor Statistics is now publishing indexes of monthly changes in the cost of living to be used as a basis for changes in wages. Any organization can obtain this mimeographed release each month upon request to the Department of Labor, Washington, D. C.

Even with automatic wage adjustment plans in effect, the fact should be recognized that new wage agreements will still have to be made occasionally. In the first place, the automatic scale cannot entirely keep

¹The relative importance of each group of items used in computing these costs (1935-1939) is reported in the *Monthly Labor Review* of the Bureau of Labor Statistics as follows: food, 33.9 percent; rent, 18.1 percent; clothing, 10.5 percent; fuel, electricity, and ice, 6.4 percent; house furnishings, 4.2 percent; and miscellaneous, 26.9 percent.

TABLE 2.—CHANGES IN THE BASIC WAGE OF \$125 A MONTH IF WAGES ARE ADJUSTED UPWARD OR DOWNWARD 2½ PERCENT FOR EACH CHANGE OF 2½ POINTS SHOWN IN THE U. S. BUREAU OF LABOR STATISTICS' COST-OF-LIVING INDEX (1935-1939 = 100)

Rising cost of living		Declining cost of living	
Cost-of-living index	Wage scale	Cost-of-living index	Wage scale
Below 100.....	\$125.00	150.0-147.6.....	\$188.50
100.0-102.4.....	125.00	147.5-145.1.....	184.38
102.5-104.9.....	128.12	145.0-142.6.....	181.25
105.0-107.4.....	131.25	142.5-140.1.....	178.12
107.5-109.9.....	134.38	140.0-138.6.....	175.00
110.0-112.4.....	137.50	137.5-135.1.....	171.88
112.5-114.9.....	140.62	135.0-132.6.....	168.75
115.0-117.4.....	143.75	132.5-130.1.....	165.62
117.5-119.9.....	146.88	130.0-127.6.....	162.50
120.0-122.4.....	150.00	127.5-125.1.....	159.38
122.5-124.9.....	153.12	125.0-122.6.....	156.25
125.0-127.4.....	156.25	122.5-120.1.....	153.12
127.5-129.9.....	159.38	120.0-117.6.....	150.00
130.0-132.4.....	162.50	117.5-115.1.....	146.88
132.5-134.9.....	165.62	115.0-112.6.....	143.75
135.0-137.4.....	168.75	112.5-110.1.....	140.62
137.5-139.9.....	171.88	110.0-107.6.....	137.50
140.0-142.4.....	175.00	107.5-105.1.....	134.38
142.5-144.9.....	178.12	105.0-102.6.....	121.25
145.0-147.4.....	181.25	102.5-100.1.....	128.12
147.5-149.9.....	184.38	100.0 and below.....	125.00
150.0-152.4.....	188.50		

pace with fundamental conditions of supply and demand for labor. During rapid expansion of industry, money wages tend to rise faster and farther than the cost of living; during a prolonged depression, the employer's ability to pay may sink faster than the cost of living. In the second place, the relative demand for specific groups of labor varies from time to time, this fact necessitating a change in the scale of wages paid. Finally, the automatic scale of wages does not eliminate all the fluctuations in real wages because of variations in living costs from city to city. Living costs for cities not included in the Bureau's list may vary considerably from the general cost-of-living index. Although these limitations to an automatic wage scale do not nullify its usefulness, recognizing them before initiating the plan will prevent any notion that this plan can be used as a panacea for all differences in opinion as to what level wages should be established.

R. W. BARTLETT and L. F. TAMMEN

FACTORS RELATED TO LAND USE IN BOONE COUNTY, ILLINOIS¹

Data were collected from the AAA records for 252 farms in Boone county, Illinois, on land use in 1935 and 1939 and on other points from mortgagees' files. This county, located along the Wisconsin line and west

¹This report is the third of three on this project (see *Illinois Farm Economics*, July, 1940, and March, 1941).

TABLE 1. — DIFFERENCES IN 249 BOONE COUNTY, ILLINOIS, MORTGAGED TRACTS, 1935 LAND-USE DATA CLASSIFIED BY VARIOUS FACTORS

Item	Number	Acres in cropland	Appraised value per acre	Loan ratio (%)	Dairy cows	Percent of land in cropland	Percent of cropland in soil-depleting crops	Percent of cropland in hay and rotation pasture	Rated yield of corn (bu.)	Soil rating
A. Soil Productivity Ratings										
Under 5	136	103.1	\$127.30	47	14.8	83.1	78.4	20.6	36.6	3.5
5 or more	113	101.3	102.90	52.3	17.3	76.9	75.2	22.4	34.3	5.6
Difference or total	249	-1.8	\$-24.40	+5.3	+2.5	-6.2	-3.2	+1.8	-2.3	+2.1
B. Topography										
Level	64	108.9	\$129.80	45.8	14.2	81.5	77.4	21.1	35.6	4.3
Undulating	97	102.1	110.40	51.7	17.5	81.0	76.2	22.2	35.5	4.2
Rolling	64	101.8	92.50	53.3	15.2	78.6	76.5	21.4	35.1	4.9
Difference or total	225	-7.1	\$-37.30	+7.5	+1.0	-2.9	-0.9	+0.3	-0.5	+0.6
C. Size of Farm										
Less than 150 acres	130	72.4	\$119.80	48.4	12.2	82.0	75.9	23.0	35.5	4.4
150 or more acres	122	134.4	112.30	50.7	19.9	78.3	78.3	19.5	35.5	4.4
Difference or total	252	+62.0	\$-7.50	+2.3	+7.7	-3.7	+2.4	-3.5	0	0
D. Date Loan Was Closed										
Before 1934	96	102.0	\$146.40	43.6	14.1	80.2	77.9	20.2	35.9	4.3
1934 and after	156	102.7	97.60	53.2	17.0	80.2	76.6	22.0	35.3	4.5
Difference or total	252	+7	\$-48.80	+9.6	+2.9	0	-1.3	+1.8	-0.6	+0.2
E. Tenure Class										
Owners	145	91.8	\$116.30	51.6	16.7	80.0	75.3	23.1	35.7	4.5
Tenants	95	120.2	113.30	45.7	14.4	79.9	78.9	19.3	35.1	4.4
Difference or total	240	+28.4	\$-3.00	-5.9	-2.3	-0.1	+3.6	-3.8	-0.6	-0.1
F. Value of Land (Appraised Value per Acre)										
\$ 29- 92	86	102.3	\$ 79.60	51.5	15.7	74.4	77.9	20.0	33.8	5.2
93-120	81	105.9	105.70	53.0	17.1	82.9	75.1	23.6	36.2	4.2
121-317	85	99.3	163.20	44.3	15.0	83.5	78.1	20.5	36.6	3.9
Difference or total	252	-3.0	\$+83.60	-7.2	-0.7	+9.1	+0.2	+0.5	+2.8	-1.3
G. Loan Ratio										
\$-43 percent	90	97.3	\$125.90	34.0	13.9	80.1	78.1	20.5	35.1	4.3
44-58 percent	80	110.4	122.10	49.7	16.0	79.0	76.8	21.4	35.8	4.4
59-97 percent	82	100.3	99.70	66.4	17.8	81.5	76.3	22.1	35.6	4.6
Difference or total	252	+3.0	\$-26.20	+32.4	+3.9	+1.4	-1.8	+1.6	+0.5	+0.3

of Lake Michigan, is chiefly a dairy county. Meat production is important on some farms; a large canning company provides an outlet for some vegetable crops, but, in general, cash crops are not important. Under

these circumstances attempts to increase incomes to meet debt payments would be expected to result in an increase in the number of cows.

These various data were tabulated and various averages calculated for a number of factors. These averages will first be shown for single factor groupings and then for double factor groupings.

Single Factor Relationships, 1935 Land Use

A. *Soil Productivity*.—The average soil productivity index for 249 tracts was calculated by using the ratings published in *Boone County Soils*, June, 1939.¹ The more important soils and their ratings are:

Type of soil	Percent of total	Ratings for field crops	Ratings for pasture
Pecatonica silt loam.....	24.14	5	A
Saybrook silt loam.....	16.95	3	...
Caledonia silt loam.....	9.98	2-5	...
Capron silt loam.....	6.86	4	...
Westville silt loam.....	6.23	7	B
Other loam, bottom.....	5.81	5-10	...
Miami silt loam.....	5.43	5	A

The tracts were sorted on the basis of these indexes into two groups: those with productivity under 5 and those with productivity of 5 or more. The averages of various factors are shown in Table 1 (A). In comparison with the farms on the better soils, those on poorer soils had higher loan ratios (percent that mortgage was of appraised value), more dairy cows, a smaller percent of land in cropland, a smaller percent of cropland in soil-depleting crops, and a higher percent of cropland in hay and rotation pasture. These differences reflect greater adaptation of these poorer lands to hay and pasture. The average corn yield ratings did not differ as much as might have been expected (2.3 bushels), but this small difference may reflect a tendency to use the best land on the poorer farms for corn. Data were not available to indicate the use made of the larger grain crops on the farms with better soils; the appraisal records did not indicate more hogs on these farms.

B. *Topography*.—Data permitted grouping 225 farms into three groups on the basis of topography, i.e. level, undulating, and rolling (Table 1 (B)). The various averages do not indicate such a close relationship between topography and soil quality as was found in the Vermilion county study. In comparison with the level farms, those on rolling land had fewer crop acres, lower appraised values, higher loan ratios, about one more cow per farm (the highest number was on the undulating farms), a smaller percent of land in cropland, a slightly smaller percent

¹Soil Report No. 65. Agr. Exp. Sta., Univ. of Illinois. On the scale used, a rating of 1.0 represents land best adapted to crops, and 10.0 that poorest adapted.

of cropland in soil-depleting crops, a slightly higher percent of cropland in hay and pasture, and only about half as many hogs.

C. Size of Farm.—The farms were divided into two groups according to size: 150 acres or more, and less than 150 acres (Table 1 (C)). The larger farms had nearly twice as many crop acres, about 60 percent more cows, and over twice as many hogs as the smaller ones. These larger farms were valued lower per acre, had higher loan ratios, a smaller percent of land in cropland, a larger percent of cropland in soil-depleting crops, and a smaller percent of cropland in hay and pasture. The soils were similar. The larger number of cows per acre in cropland on the smaller farms indicates slightly greater intensity on such farms.

D. Date Loan Was Closed.—The loans made after 1934 were for smaller amounts than loans made before 1934, reflecting the decline in land values (Table 1 (D)). The farms in both groups were quite similar; those on which loans were made after 1934, however, reported nearly 3 more cows, in part reflecting a tendency toward more cows in the later period in the county as a whole. In spite of a smaller loan per acre on the loans made after 1934, \$51.92 compared with \$63.83, the average loan ratio was 10 percent-points higher in the later period.

E. Tenure.—About two-thirds of these farms were operated by owners (Table 1 (E)). The only significant difference between these two groups is that the tenant farms had about one-third more crop acres, fewer cows, and lower loan ratios. Differences in land use were not significant.

F. Value of Land.—Land value averages were influenced by the time when the loan was made, as well as by differences in productivity and other factors affecting value (Table 1 (F)). The principal differences between the high- and low-priced farms were that the former had lower debt ratios, a higher percentage of land in cropland, and somewhat better soils—both as measured by corn yields and soil ratings.

G. Loan Ratios.—The higher loan ratios accompanied lower land values, but this partly reflected the later date at which many of the loans were made. Corn yields and soil ratings indicated but little differences in basic productivity among the three groups shown in the table. The chief organization difference among the groups was more cows on the farms with high debts. No significant differences in intensity of cropping were indicated. The increased number of cows may reflect a trend toward more cows in the area (see Section D above), but it is reasonable to assume that if debts affected organization in the area, the number of cows, the chief source of money income, would be increased.

TABLE 2.—DIFFERENCES IN 249 BOONE COUNTY, ILLINOIS, MORTGAGED FARMS,
1935 LAND-USE DATA, GROUPED BY SOIL QUALITY AND LOAN
RATIO, AND BY TENURE AND LOAN RATIO

Loan ratios	Number	Acres in crop-land	Appraised value per acre	Loan ratio (%)	Dairy cows	Percent of land in crop-land	Percent of crop-land in soil-depleting crops	Percent of crop-land in hay and rotation pasture	Rated yield of corn (bu.)	Soil rating
A. Soil Ratings—Under 5										
Low	54	98.8	\$135.60	32.5	13.3	83.9	79.8	19.2	35.9	3.4
Medium	47	105.6	130.90	49.7	14.9	80.3	78.0	20.9	36.7	3.6
High	35	106.3	109.60	65.7	16.3	85.7	76.9	22.4	37.4	3.5
Difference or total	136	+7.5	\$-26.00	+33.2	+3.0	+1.8	-2.9	+3.2	+1.5	+0.1
B. Soil Ratings—5 and Over										
Low	35	95.6	\$110.30	36.2	14.4	74.6	74.8	23.1	33.8	5.6
Medium	33	117.2	109.70	41.4	17.6	77.0	75.0	22.1	34.6	5.6
High	45	94.0	92.10	66.8	18.7	78.5	75.7	22.1	34.4	5.5
Difference or total	113	-1.6	\$-18.20	+30.6	+4.3	+3.9	+0.9	-1.0	+0.6	-0.1
C. Owners										
Low	42	85.0	\$120.70	34.7	15.2	78.6	77.2	21.1	34.7	4.5
Medium	48	91.0	128.50	49.5	16.2	79.6	75.3	22.9	36.1	4.5
High	55	97.6	102.30	66.4	18.3	81.4	74.0	24.8	36.2	4.6
Difference or total	145	+12.6	\$-18.40	+31.7	+3.1	+2.8	-3.2	+3.7	+1.5	+0.1
D. Tenants										
Low	38	117.5	\$121.90	31.6	13.4	80.9	79.4	19.2	35.2	4.2
Medium	37	128.9	117.00	48.8	14.8	77.8	78.2	20.1	35.5	4.4
High	20	109.0	90.20	66.6	15.6	81.8	78.8	18.0	34.0	4.6
Difference or total	95	-8.5	\$-31.70	+35.0	+2.2	+0.9	-0.6	-1.2	-1.2	+0.4
E. Loans Made Before 1934										
Low	45	92.5	\$155.50	35.8	12.0	80.9	79.8	18.3	35.0	4.3
Medium	44	108.4	144.80	47.2	15.6	79.3	76.7	21.6	36.8	4.2
High	7	125.1	98.30	71.7	18.4	81.1	73.3	23.6	35.9	5.0
Difference or total	96	32.6	\$-57.20	+35.9	+6.4	+0.2	-6.5	+5.3	+0.9	+0.7
F. Loans Made in 1934 and After										
Low	45	102.1	\$96.40	32.2	15.9	79.3	76.4	22.7	35.1	4.3
Medium	36	112.9	94.40	52.7	17.0	78.5	76.9	21.2	34.7	4.6
High	75	97.9	99.90	65.9	17.8	81.6	76.6	21.9	35.6	4.6
Difference or total	156	-4.2	\$+3.50	+33.7	+1.9	+2.3	+0.2	-0.8	+0.5	+0.3

Two-Factor Relationships, 1935 Land Use

After grouping the records by soil productivity, tenure, and date when the loan was made and then subsorting by loan ratios, the averages for various factors were computed (Table 2).

A. *Loan Ratios for Farms on Better Soils.*—The only significant difference was more cows per farm on the farms with heavier debts. These farms had somewhat more cropland, were appraised at lower values, reflecting the later date of these heavy loans, showed a slightly larger percent of land in crops, a smaller percent of cropland in soil-depleting crops, a higher percent of cropland in hay and pasture, and were found on slightly better land, as indicated by rated corn yields but not by soil ratings.

B. *Loan Ratios for Farms on Poorer Soils.*—The only significant difference between these groups was that more cows were kept on the farms with higher debt ratios. The farms with higher debt ratios had a larger percent of land in crops and were on slightly better soils.

C. *Loan Ratios on Owner-Operated Farms.*—The owner-operated farms were consistently smaller but had more cows than the tenant-operated farms. The principal differences in the owner-operated farms when grouped by loan ratios were larger farms, more crop acres, and more cows on the farms with higher loan ratios.

D. *Loan Ratios on Tenant-Operated Farms.*—More cows were kept on the farms with higher loan ratios, as in the other group. Other relationships were not consistent.

E. *Loans Made Before 1934.*—For the 96 loans made before 1934, the size of farm, as measured by crop acres and number of cows, increased with the loan ratio. The more heavily indebted farms had a smaller percent of cropland in soil-depleting crops and a larger percent in hay and pasture. The more heavily indebted farms were on slightly poorer soils as measured by the soil rating index. Inasmuch as the number of cows increased by a larger percentage than the crop acres, a positive relationship between debt ratio and number of cows was indicated.

F. *Loans Made During and After 1934.*—This last relationship was also indicated by the loans made during and after 1934. In general, the number of cows was higher on farms where loans were made during and after 1934 than on farms where the loans were made before 1934, and the number of hogs was lower. The larger number of cows was not explained by larger crop acres, as there was no uniform tendency for size of farm to increase with debt ratio in cases where the loans were made in 1934 or later. No significant differences were indicated in cropping systems.

In general, the number of cows on all farms was higher in the group where loans were made at a later date. It should be remembered that this figure refers to the number at the time the loan was made.

TABLE 3.—DIFFERENCES IN 203 BOONE COUNTY MORTGAGED FARMS, 1935 AND 1939
LAND-USE DATA, GROUPED BY SOIL QUALITY AND LOAN RATIOS
AND BY TENURE AND LOAN RATIOS

Loan ratios	Number	Acres in cropland 1935	Number of cows	Percent of land in cropland		Percent of cropland in soil-depleting crops		Percent of cropland in hay and rotation pasture		Rated yield of corn (bu.)		Soil rating
				1935	1939	1935	1939	1935	1939	1935	1939	
A. Soil Ratings Under 5												
Low.....	45	103.2	14.2	84.3	83.1	77.8	72.5	21.0	25.9	35.9	37.5	3.4
Medium.....	41	104.8	15.0	80.8	81.0	78.0	74.8	20.9	24.8	37.1	38.2	3.6
High.....	28	107.6	16.5	85.8	88.3	78.6	69.9	21.0	29.5	37.8	37.0	3.5
Difference or total....	114	+4.4	+2.3	+1.5	+5.2	+0.8	-2.6	0	+3.6	+1.9	-0.5	+0.1
B. Soil Ratings, 5 and Over												
Low.....	26	99.5	15.5	73.6	73.2	77.0	66.0	21.3	33.3	34.6	35.2	5.7
Medium.....	26	125.3	16.5	77.4	75.5	74.8	67.6	22.7	30.3	34.4	35.0	5.6
High.....	37	97.1	19.1	79.8	78.6	73.9	64.3	23.9	34.2	34.8	35.2	5.5
Difference or total....	89	-2.4	+3.6	+6.2	+5.4	-3.1	-1.7	+2.6	+0.9	+0.2	0	-0.2

Relationships in 1939

Land-use data were available for 1939 only for farms cooperating with the AAA; this reduced the size of the available sample. Averages for 1935 and 1939 are shown for a 2-sort grouping—soil ratings subsorted by loan ratios. The principal change between 1935 and 1939 was a reduction in percent of cropland in soil-depleting crops and an increase in the percent in hay and rotated pasture (Table 3). However, the changes were not large, indicating that in this area only small adjustments were necessary between these two years for compliance with AAA programs.

Any correlations with loan ratings were similar in these samples to those shown in Tables 2 (A) and (B). More cows and a higher percent of land in cropland were to be found on the farms with higher loan ratios in all groups.

Conclusion

The time when the loan was made is shown to be important. In general, loans made after 1934 represented higher loan ratios than those made earlier. The number of cows tended to increase with the size of the debt ratio. No significant relationships between cropping systems and debt ratios were indicated. Farms on the less fertile land and on the lower-valued land had a smaller percent of land in cropland, but no significant difference in percent of cropland in soil-depleting crops were indicated.

L. J. NORTON and B. D. PARRISH

BUYING FEEDER CATTLE AT COUNTRY POINTS

An increasing number of requests have come to the Illinois Agricultural Experiment Station for information regarding the sale of feeder cattle at country points. In order to obtain such information, representatives of the Station visited and interviewed last fall over 100 Illinois feeder cattle dealers operating at country points. This article summarizes some of the information which was gathered in that study from the standpoint of the buyer of feeder cattle.

While some dealers have handled feeder cattle in the country for years, much of the business is a recent development. Of 103 dealers interviewed, 47 had been operating for 5 years or less; 23, from 6 to 10 years; and the remaining 33, for 11 years or more.

Of 99 dealers reporting feeder cattle sales in 1940, 19 handled not more than 500 head; 21, between 500 and 1,500; 24, between 1,500 and 3,000; 20, between 3,000 and 10,000; and 15, 10,000 or more. Some dealers had other business in addition to handling feeder cattle. Such operators might handle a relatively small volume of cattle on as low a margin as an operator handling many more cattle but depending on cattle operations for his entire income. But it is probable that a larger operator would have some advantages in procuring larger numbers of feeder cattle.

The cattle handled by the dealers interviewed came from a wide variety of sources—from public stockyards and from the range; from the southwest, west, northwest, and from Canada. More dealers, however, reported cattle from the southwest than from any other area.

It is believed that many dealers emphasized that their cattle come direct from the range, even tho they may have handled many cattle shipped to them from the public markets. For example, the dealers reported handling over 300,000 cattle direct from the range in both 1939 and 1940, whereas the Illinois Department of Agriculture listed only 215,000 quarantined in 1939 as coming direct from the ranges, and only 138,000 in 1940. While the Department's records may not be complete, the above figures carry significance for the buyer of feeder cattle.

Quality of cattle handled. The bulk of the cattle seen in the pens of dealers visited would grade *medium*, *medium to good*, *good*, or *good to choice* (using the standard U. S. feeder cattle grades). Occasional lots would grade *choice*. Only two of the lots of cattle inspected would grade *choice to fancy*, or *fancy*. Many cattle would grade only *common* and some as low as *inferior*. In several instances dealers described pens of cattle as *choice* where the investigator graded them as *good*.

Many feeders, buying their own cattle, make costly errors in appraising cattle grades. First, few of them have definite grade standards in

mind. They compare whatever cattle are before them—on that basis, the better animals in the bunch, even tho of only *medium* grade, may look pretty good. Second, many are misled by color—any stock with white faces passing for good range cattle, and any black cattle passing as good Angus. Third, even tho they may have some idea of grades, few feeder buyers are able to do a satisfactory job of sorting.

In numerous instances short yearlings were mixed with calves. Doubtless they sold as calves unless buyers objected. Since yearlings frequently sell \$1.00 per cwt. below calves, a feeder can scarcely afford to accept them at calf prices. While horns and tails are good indicators of age, the teeth are the surest guide. However, many men do not care to go to the trouble of "mouthing" cattle.

It is important to know the grade and age of cattle that one is buying and to buy them for what they really are. All grades and all weights of feeder cattle have a place, provided they are fitted into a suitable feeding program, in the hands of men qualified to handle them. Here is a case in point. A farmer was buying a small bunch of good-quality yearling steers. While he was slowly looking them over, the dealer said to the writer: "Those cattle are too good for the man." He knew what kind of feeder the man was and that the quality of these cattle justified better handling and a better finish than the man would give them.

Methods of sale. Of 111 dealers giving information on this question, 90 reported that over 75 percent of their cattle was sold at private treaty; 9 reported that over 75 percent of their cattle was sold at auction; whereas only 1 reported that over 75 percent was sold by salesmen working the country.

The bulk of the cattle apparently was sold by weight. Even in the big auction feeder sales, many of the cattle were sold by weight. At auction sales barns and community auctions, a common method of sale was by the head.

Financing. Dealers were asked whether they financed feeders buying cattle from them. Of 111 replies, 90 said no, while 21 said they did such financing. Much of the financing by dealers was in the form of title-retaining notes—the title remaining with the dealer until the note was paid. Current interest rates were reported as 4 to 6 percent, with 5 and 5½ common. Several dealers indicated that feeder buyers would pay 6 as readily as 5 percent.

Risk coverage. An important problem in buying feeder cattle is the risk from sickness and possible death losses. Shipping fever is most frequently mentioned in this connection. When asked whether they guaranteed feeder buyers against loss from this source, 99 said no, 12 said

they did to some extent. Coverage reported as given by the 12 dealers varied widely, a few doing it regularly, others giving some sort of guarantee only if that were necessary in order to make a sale. Any guarantee of this kind is only as good as the man who makes it and should be in writing to avoid any disagreement later.

Reasons for country selling. There appear to be many reasons for development of country selling of feeder cattle at so many points. A primary one is availability of stocker and feeder rates (85 percent of the fat rate) to practically all country points while they were denied on shipments to the public markets since January, 1932. These are to be again available to the public markets from August 1, 1941. Other reasons are: Operating costs are lower in the country; railroads have furnished yard and pen facilities at little or no expense to dealers; dealers are free from supervision by the Packers and Stockyards Administration; and the dealers meet the farmer on his own ground.

Likewise many factors may influence feeders to buy at country points. Among them seem to be: (1) Greater convenience of buying at a nearby point; (2) desire of many feeders to get cattle immediately, once they decide to buy; (3) the belief of feeders that they avoid paying a buying commission; (4) the belief that they are getting cattle direct from the range; (5) hesitancy on the part of the feeder to send an order to a market to be filled when that particular kind of cattle are available; (6) the feeling that the feeder is doing his own buying; (7) the belief that he is doing his own sorting; and (8) the opportunity to buy in odd-sized lots.

Problems in buying feeder cattle. Five aspects of beef production operations seem to be important, viz.: (1) planning a feeding and a marketing program; (2) buying feeder cattle; (3) feeding the cattle; (4) marketing the fed cattle; and (5) selling consumers on the increased use of beef. Only the first two will be discussed here.

The importance of a definite feeding and marketing program seems obvious. Yet a common opinion expressed by feeder cattle dealers was that less than one-third of feeder cattle buyers had a definite feeding program planned and bought the kind of cattle that would fit their particular program. Certainly a carefully considered program making use of sound information regarding seasonal and cyclical price trends and of available market data helps to take much of the gamble out of cattle feeding.

In regard to the buying of the feeders, it is pertinent to raise the question whether the average feeder is qualified to select and buy his own cattle, or whether he would do well to employ a competent person to

assist with the buying. When questioned concerning this problem, feeder cattle dealers commonly estimated that only 10% of the cattle feeders are able to do a good job of selecting and buying their own feeder stock.

Whether cattle are to be purchased at a public stockyards, from a country dealer, or on the range, determines to a considerable extent what sort of buying assistance should be sought. At the public markets, some of the large commission firms employ men who specialize in buying feeder cattle and become highly skilled in this line. In country buying, it may be possible to obtain the assistance of an experienced feeder who is a good judge of cattle as well as a keen trader. However, one should guard against employing a person who has any financial interest in the cattle under consideration or who is being paid any commission by the owner or seller of the cattle. This latter practice is much more common than is generally realized. The weight of experience is against individual feeders going west to buy small lots of feeders on the range.

The question of weights has many angles. Three of them are: (1) Time of weighing and the fill on the cattle; (2) dependability of the scale; and (3) amount of test load used in testing the scale. Public market scales are now usually tested with 20,000 to 30,000 pounds of standard test weights. On the other hand, country scales are seldom tested with more than 3,000 pounds of standard test weights. The sound practice is to buy feeder cattle by weight, weighed on scales of demonstrated accuracy.

The real cost of feeder cattle is influenced directly by (1) the price per pound; (2) the weight of the cattle; (3) the grade and sort, in relation to price; and (4) the health (and thrift) of the cattle.

The axiom "Well bought is half sold," is particularly true in buying feeder cattle.

R. C. ASHBY

Footnotes for the last page:

¹⁻²The first source is for annual data; the second is for current data from which tables may be brought to date.

³Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; subsequent monthly issues. ⁴Same as footnote 1. ⁵Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁶Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁷Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁸Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁹Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ¹⁰Monthly Indexes of Non-Agricultural and National Income, Supplement, August, 1937, B.A.E.; Demand and Price Situation, or Agricultural Situation. ¹¹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹²Federal Reserve Bulletin of Federal Reserve Board, September, 1933 and subsequent issues; Survey of Current Business, seasonally adjusted. ¹³Preliminary estimate. ¹⁴Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural income ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All com- modities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	107	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	87	68	75
1932	65	48	41	69	43	43	62	68	47	58
1933	66	51	45	71	49	51	72	63	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	77	74	87
1936	81	81	86	80	74	82	103	90	86	103
1937	86	86	96	84	80	87	103	95	102	113
1938	79	69	69	80	72	81	101	88	78	88
1939	77	65	65	78	72	81	97	93	92	108
1940	78	68	69	79	78	90	113	98	105	122
1940 July	78	66	67	79	71	72	90	98	98	121
Aug.	77	66	69	79	71	80	101	99	106	121
Sept.	78	66	72	79	76	84	106	100	112	125
Oct.	79	66	72	79	80	98	124	100	116	129
Nov.	80	68	73	79	80	101	128	102	116	132
Dec.	80	70	74	79	86	105	131	104	122	138
1941 Jan.	80	72	78	80	86	90	112	104	121	139
Feb.	81	71	76	80	84	88	110	106	127	141
Mar.	82	72	76	80	88	94	118	106	131	143
Apr.	83	74	82	80	93	100	124	106	135	140
May	85	76	83	81	97	108	133	109 ¹¹	144	150
June	87	82	87	82	96 ¹¹	...	...	...	152	157
July	89	86	91 ¹¹	84	...	...	...	...	...	162 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			July 1940	Current months		
	1924-29	1939	1940		May	June	July
Corn, bu.	\$.81	\$.43	\$.56	\$.59	\$.66	\$.68	\$.69
Oats, bu.	.42	.28	.32	.26	.34	.33	.32
Wheat, bu.	1.30	.67	.81	.66	.88	.90	.94
Barley, bu.	.66	.41	.46	.42	.50	.50	.50
Soybeans, bu.	1.94	.74	.82	.70	1.20	1.25	1.34
Hops, cwt.	9.97	6.56	5.54	6.00	8.40	9.30	10.70
Beef cwt., cwt.	8.57	8.18	8.84	8.60	9.60	9.90	9.60
Lamb, cwt.	12.22	8.18	8.52	8.80	10.00	10.20	10.20
Milk cows, head	78.00	63.00	65.00	66.00	75.00	80.00	84.00
Veal cwt., cwt.	11.27	9.15	9.63	9.00	10.50	10.20	10.80
Sheep cwt.	6.52	3.44	3.44	3.05	4.90	4.35	3.90
Butterfat, lb.	.42	.23	.27	.25	.34	.34	.35
Milk, cwt.	2.32	1.59	1.67	1.60	1.85	1.90	2.00
Eggs, doz.	.30	.16	.17	.13	.19	.22	.23
Chickens, lb.	.21	.13	.13	.14	.16	.16	.17
Wool, lb.	.36	.25	.30	.30	.40	.40	.40
Apples, bu.	1.59	1.07	1.14	1.05	1.20	1.25	.80
Hay, ton	13.88	6.05	6.68	5.20	8.30	7.40	7.10
Potatoes, bu.	1.39	.80	.83	.80	.75	.95	.90

For sources of data in tables see preceding page.

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CHANGES IN NET WORTH OF 180 ILLINOIS FARM FAMILIES, 1940

An average increase in net worth of \$783 was shown by 180 Illinois farm families who kept complete Farm Account and Home Account records during 1940. The families listed all their assets and liabilities at the beginning of the year and again at the end. This information constituted the net worth statement which was kept in addition to a record of all the cash income and expenses. These records were kept in cooperation with the County Farm Bureaus, the County Home Bureaus, and the Departments of Agricultural Economics and Home Economics of the University of Illinois. The fact that these families were interested in keeping such accounts would indicate that they represent the more progressive type of family. The financial progress of a family may be measured with a fair degree of success by using the change in net worth as an indicator.

There was a tendency for the net worth to be increased more rapidly during the year as the net cash receipts increased (Table 1). Several

TABLE 1.—DIFFERENCES IN NET WORTH OF 180 ILLINOIS FARM FAMILIES
ACCORDING TO NET CASH RECEIPTS, 1940

Item	Net cash receipts group					
	Average, 1940	Under \$1000	\$1000- 2000	\$2000- 3000	\$3000- 4000	\$4000- and over
Number of records.....	180	17	71	42	20	30
Acres per farm.....	231	161	216	224	274	286
Total beginning assets.....	\$23 581	\$13 729	\$14 592	\$25 371	\$32 114	\$42 242
Total beginning liabilities.....	6 025	3 569	3 196	7 301	7 350	11 440
Beginning net worth.....	\$17 556	\$10 160	\$11 396	\$18 070	\$24 764	\$30 802
Total ending assets.....	\$24 405	\$14 306	\$15 126	\$25 897	\$32 717	\$44 459
Total ending liabilities.....	6 066	3 802	3 291	7 190	6 770	11 873
Ending net worth.....	\$18 339	\$10 504	\$11 835	\$18 707	\$25 947	\$32 586
Change in net worth during 1940	\$ +783	\$ +344	\$ +439	\$ +637	\$ +1 183	\$ +1 784
Adjusted cash living expenses*..	\$ 1 208	\$ 708	\$ 979	\$ 1 291	\$ 1 484	\$ 1 735

*Cash living expenses adjusted by the inventory change of house furnishings, clothing, residence, and family share of the automobile.

Articles in *Illinois Farm Economics* are based largely upon findings of the
Agricultural Experiment Station.

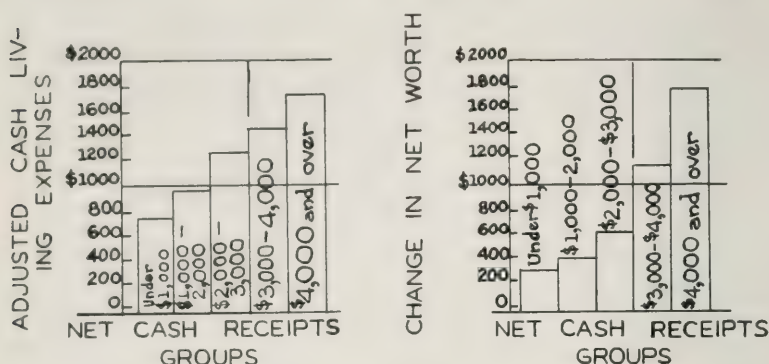


FIG. 1.—DIFFERENCES IN ADJUSTED CASH LIVING EXPENSES AND THE CHANGE IN NET WORTH OF 180 ILLINOIS FARM FAMILIES ACCORDING TO THE NET CASH RECEIPTS, 1940

factors must be considered in explaining this relationship. One of importance is the larger beginning and ending net worth of the families with higher cash receipts. This, as well as the increased number of acres per farm from group to group indicates a larger volume of business on the farms with higher cash incomes. This relationship of higher income and larger size of farm is prevalent during years when farming is generally profitable. An example of such a year was 1940.

If it is profitable to carry on a business, then the larger the business, the higher will be the income. Similarly, when it is unprofitable to operate, the larger the business the larger the losses will be as compared with the smaller losses for a smaller business. The efficiency with which the farm business is handled is another important factor in determining the net cash receipts. Income from sources other than the farm business may be of importance in a few cases where other farms are owned and rented out or sideline businesses are operated.

That an increase in net cash receipts is important in increasing the quality of living as measured by living expenses is shown in Fig. 1. The adjusted cash living expenses (see footnote, Table 1) increased consistently as the net cash receipts increased. The change in this item from group to group was more regular than the change in net worth (Fig. 1). In the lowest net cash receipts group, about twice the amount was used for living as was used to increase the net worth, whereas in the highest group about the same amount went to each. This indicates that, generally speaking, as family earnings reached a higher level a larger proportion of the earnings goes toward an increased net worth. Thus current living

TABLE 2.—DIFFERENCES IN NET WORTH OF 180 ILLINOIS FARM FAMILIES
ACCORDING TO NET FAMILY EARNINGS, 1940

Item	Net family earnings group					
	Average, 1940	Under \$1500	\$1500- 2500	\$2500- 3500	\$3500- 4500	\$4500 and over
Number of records.....	180	33	57	46	19	25
Acres per farm.....	231	177	218	220	294	304
Total beginning assets.....	\$23 581	\$14 310	\$16 233	\$21 958	\$33 745	\$47 831
Total beginning liabilities.....	6 025	2 347	3 999	6 185	11 221	11 254
Beginning net worth.....	\$17 556	\$11 963	\$12 234	\$15 773	\$22 524	\$36 577
Total ending assets.....	\$24 405	\$14 171	\$16 346	\$23 159	\$35 002	\$50 526
Total ending liabilities.....	6 066	2 514	3 925	6 511	11 178	10 931
Ending net worth.....	\$18 339	\$11 657	\$12 421	\$16 648	\$23 824	\$39 595
Change in net worth during 1940	\$ +783	\$ -306	\$ +187	\$ +875	\$ +1 300	\$ +3 018
Tenure						
Years on present farm.....	12	10	10	12	15	18
Number of owners.....	48	9	11	15	4	9
Part-owners.....	50	4	14	11	9	12
Related tenants.....	45	10	14	13	4	4
Unrelated tenants.....	37	10	18	7	2	0
Adjusted cash living expenses...	\$ 1 208	\$ 809	\$ 1 087	\$ 1 212	\$ 1 597	\$ 1 710

conditions are improved up to a certain point before capital investments are greatly increased.

Net family earnings (the amount of money available for adjusted cash living expenses, interest payments, and life insurance protection, plus the value of farm-furnished goods and the change in net worth) indicate essentially the same relationship between living costs and capital investments as was shown when net cash receipts were used as the sorting factor. The higher the net family earnings, which covers both the living cost and the change in net worth, the greater the proportionate increase in net worth. For example, in the last two groups, a difference of only \$113 was noted in the adjusted cash living expenses, but the difference in the increase in net worth was more than \$1,700 (Table 2). In the lowest net family earnings group, a decrease in the average net worth occurred. A comparison of the two diagrams of Fig. 2 shows the relative increases in living costs and changes in net worth when the 180 families were grouped according to the net family earnings.

The total investment and the average increases in net worth were higher for those families having larger net family earnings. Essentially the same reasons can be given to explain their relationship as were given to explain the relationship between total investment and net cash receipts.

The tenure pattern of the different net family earning groups differed

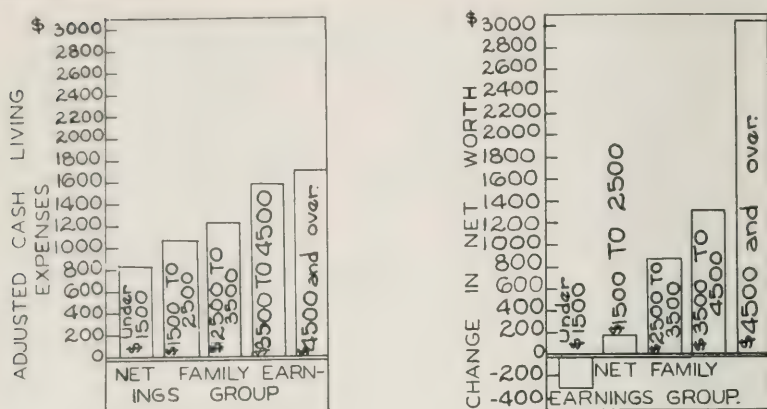


FIG. 2.—DIFFERENCES IN ADJUSTED CASH LIVING EXPENSES AND THE CHANGE IN NET WORTH OF 180 ILLINOIS FARM FAMILIES ACCORDING TO THE NET FAMILY EARNINGS, 1940

considerably (Table 2). One half of the records were in the two lower net family earnings groups and one half in the three higher groups. For the 90 families with the lower net family earnings 38 were owners or part-owners and 52 were tenants. In contrast, of the 90 families with higher earnings 60 were owners or part-owners whereas 30 (or one-third) were tenants. It is to be expected that owners would have a larger investment, and although they have larger debts they have a larger net worth. The average number of years spent on the present farm varied from 10 for the lowest group to 18 for the highest earnings group. Thus, a fairly stable tenure has been achieved even for the lowest net-family-earnings group. This factor is very important and must be kept in mind when interpreting these data.

The 180 families were divided into four groups according to their tenure status (Table 3). As would be expected, since only the assets owned by the family were included, the owners and part-owners had considerably more invested than the tenants. The liabilities, including real estate mortgages as well as other borrowed money, were also higher for the owners and part-owners. The adjusted cash living expenditures varied from \$1,015 for the unrelated tenants to \$1,321 for the full owners—a difference of only \$306. The increase in net worth was \$787 for the owners and only \$450 for the unrelated tenants. There was a difference of only 9 acres between the number of acres operated by the owners and the unrelated tenants, while the net worth of the operator at the beginning of the year was over four times as large for the owned

TABLE 3.—DIFFERENCES IN NET WORTH OF 180 ILLINOIS FARM FAMILIES
ACCORDING TO TENURE, 1940

Item	Tenure groups				
	Average, 1940	Owners	Part- owners	Related tenants	Unrelated tenants
Number of records.....	180	48	50	45	37
Acres per farm.....	231	208	272	235	199
Total beginning assets.....	\$23 581	\$40 905	\$28 700	\$11 549	\$ 8 820
Total beginning liabilities.....	6 025	10 819	7 169	3 111	1 802
Beginning net worth.....	\$17 556	\$30 086	\$21 531	\$ 8 438	\$ 7 018
Total ending assets.....	\$24 405	\$41 173	\$30 248	\$12 382	\$ 9 377
Total ending liabilities.....	6 066	10 300	7 657	3 199	1 909
Ending net worth.....	\$18 339	\$30 873	\$22 591	\$ 9 183	\$ 7 468
Change in net worth during 1940..	\$ +783	\$ +787	\$+1 060	\$ +745	\$ +450
Adjusted cash living expenses....	\$ 1 208	\$ 1 321	\$ 1 293	\$ 1 154	\$ 1 015

farms. Some of the differences in increase in net worth and in the living expense can be attributed to payment for the risk involved in owning a farm. During a favorable year, such as 1940, the relationship found appears to be reasonable. In an unfavorable period the opposite results could be expected.

L. W. SCHRUBEN

TRENDS AND INEQUALITIES IN ILLINOIS FARM REALTY ASSESSMENTS

Twenty years of change in the value of Illinois farm land and in assessment values assigned to it have not erased the inequalities burdening many land owners.

Since 1936 the assessed valuation of land and improvements in Illinois outside of Cook county has been \$1,150,000,000. This has represented about 42 percent of the assessed value of all property and about 58 percent of all real estate, exclusive of railroads.

Decline was shown in assessed valuation of land and improvements in downstate Illinois not only when market prices of land were falling, from 1927 to 1933, but also when market prices of land were advancing from 1933 to 1938.

Because changes in tax rates often offset changes in assessed values, a better index of trends is afforded by the change in taxes levied per \$100 valuation of real estate. From 1929 to 1933 taxes per \$100 realty value stood at or above 110 percent of the 1926-1930 average. From 1934 to

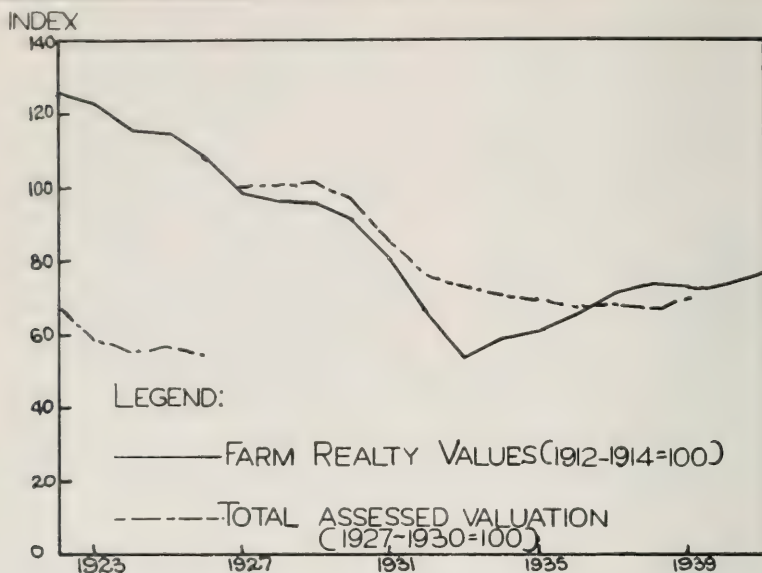


FIG. 1.—TRENDS IN FARM REALTY VALUES AND TOTAL ASSESSED VALUATION OF LANDS AND IMPROVEMENTS

Statutory assessment ratios of one-half value from 1922-1926 and full value from 1927 to date partially explain the precipitous rise of the total assessed valuation between 1926 and 1927.

1938 taxes per \$100 realty stood between 100 and 110 percent of the 1926-1930 average. In 1939 this ratio was 113 percent.

Two related factors may offer a partial explanation for the marked stability of assessed valuations. First, all real estate is reassessed every fourth year (1931, 1935, 1939, etc.). Such years are called "quadrennial assessment years." Secondly, there appeared to be a definite lag in assessed valuations responding to changes in farm realty values.

Illinois Statutes require that, "in the quadrennial year the assessor must inspect and appraise every parcel of property within his jurisdiction, placing thereon an assessment representing its fair cash value.¹ During the other three years of the quadrennial assessment period the duties of the assessor with respect to real estate are nominal. "In those years he merely makes changes arising from the addition or destruction of buildings, from the plotting of lands, and from the removal of property from an exempt status."²

¹Fair cash value means, under the Illinois law, market value or the price which the property will bring at a sale involving a willing buyer and a willing seller.

²Illinois Assessors' Manual, Illinois Tax Commission (1939), page 86.

TABLE 1.—FARM REAL ESTATE TAXES: LEVIES PER ACRE, INDEX NUMBERS OF LEVIES PER ACRE AND LEVIES PER \$100 VALUE, ILLINOIS, 1922-1939

Year	Levies per acre ^a	Index num- bers of levies per acre (1926-1930 = 100)	Levies per \$100 value ^b	Index num- bers of levies per \$100 value (1926- 1930 = 100)
1939.....	\$.95	83.6	\$1.04	112.6
1938.....	.91	80.1	.98	106.1
1937.....	.87	76.6	.98	106.1
1936.....	.83	73.1	1.00	108.2
1935.....	.79	69.5	1.02	110.4
1934.....	.72	63.4	.95	102.8
1933.....	.72	63.4	1.13	122.3
1932.....	.92	80.9	1.16	125.5
1931.....	1.03	90.7	1.07	115.8
1930.....	1.16	102.1	1.04	112.6
1929.....	1.14	100.4	.97	105.0
1928.....	1.12	98.6	.94	101.7
1927.....	1.12	98.6	.85	92.0
1926.....	1.14	100.4	.82	88.7
1925.....	1.15	101.2	.74	80.1
1924.....	1.08	95.1	.72	78.0
1923.....	1.03	90.7	.66	71.4
1922.....	1.06	93.3	.68	73.6

^aAgricultural Statistics, U. S. Department of Agriculture, 1940.^bBased on data of Federal-State Crop Reporting Service, Springfield.

A graphic presentation of the indices of farm realty values and the assessed valuations of land and improvements (Fig. 1) illustrates the tendency for assessed valuations to remain fairly constant throughout each quadrennial assessment period. This tendency is especially evident following the 1931 and the 1935 assessment years. During the period, 1931 through 1934, farm realty values were lower than in any other quadrennial assessment period included in this study. By 1933 farm real estate values had fallen off 35 percent to 65 percent of the 1931 level, but by 1934 had recovered to 75 percent of that level. The total assessed valuation of farm land and improvements, however, declined less rapidly. By 1933 the assessed valuations had dropped only 12 percent to 88 percent of the 1931 level and by 1934 had fallen off 2 percent more to 86 percent of the 1931 level.

In the second assessment period referred to, the total assessed valuations again showed a greater stability than did farm realty values. By 1938 farm realty values had increased to over 120 percent of the 1935 level, while the total assessed valuation of land and improvements dropped six percentage points below the 1935 level during this same period. Assessment periods as far back as 1923 show similar tendencies for assessed valuations to remain more stable than farm real estate values.

Allowing for (1) the 9-year attempt, 1926-1935, to apply assessment ratios above 50 percent and (2) the lag, abetted by the quadrennial

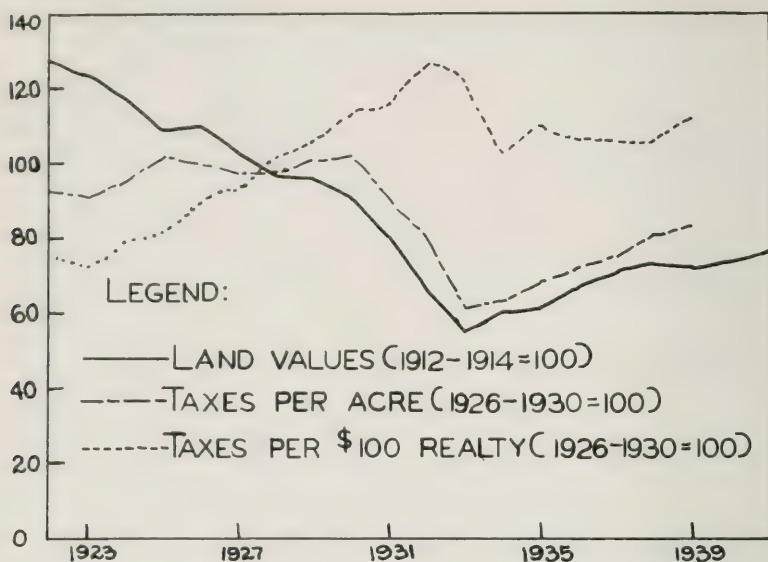


FIG. 2.—TRENDS IN FARM REALTY VALUES, TAXES PER ACRE AND TAXES PER \$100 VALUES, ILLINOIS, 1922-1939

assessment procedure, by which assessed values were shedding established figures slowly, it appears that there was still considerable flexibility in the assessments year by year and a degree of agreement of trends with the market not altogether to be expected.

Changing load of farm realty taxes. Two commonly used measures of the tax burden are taxes per acre and taxes per \$100 value. Indices of farm realty values, taxes per acre, and taxes per \$100 value, based on 1926-1930 averages and covering Illinois as a whole for the period from 1922 to 1939, are shown in Fig. 2 and Table 1.

While trends in farm realty values were generally downward from 1922 to 1933, taxes per acre followed different trends and varied within narrower margins than did realty values. Using 1926-1930 as base years, the index number of taxes per acre was 93 in 1922 while the index number of value per acre of Illinois farm real estate was 128 for this same year. The two indices are brought together mathematically in the late 1920's by using the same base years. Although land values continued downward from 1928 to 1930, taxes per acre increased by 4 percentage points over the 1928 level. For the period from 1930 to 1939 the indices of taxes per acre tended to follow trends in values of farm realty per acre.

TABLE 2.—ASSESSMENT RATIOS AND FARM REALTY VALUES PER ACRE, ILLINOIS, BY FARMING-TYPE AREAS, 1935 AND 1940

Area	1940		1935	
	Farm realty value per acre ^a	Assessment ratio ^b	Farm realty value per acre ^a	Assessment ratio ^b
	(average)	(percent)	(average)	(percent)
Dairy and truck ^c	\$121.79	34	\$106.40	37
Mixed livestock.....	86.35	44	78.58	51
Livestock and grain.....	89.95	46	78.00	50
Cash grain.....	113.02	39	95.32	45
General farming.....	58.68	49	51.91	51
Wheat, dairy, and poultry.....	48.25	47	42.56	57
Mixed farming.....	33.49	41	25.65	49
Grain and livestock.....	46.41	41	36.23	47
Fruit and vegetable.....	29.98	56	23.20	66
State.....	81.68	43	69.27	49
Averages for areas 1, 2, 3, and 4 (52 upstate counties).....	\$105.50	41	\$91.00	47
Averages for areas 5, 6, 7, 8, and 9 (49 downstate counties).....	49.93	46	38.81	53

^aCensus values as of April 1, 1940, and January 1, 1935.

^bAssessment ratios for the 9 farming-type areas, for upstate and downstate, and state, were computed by weighting, by acreages in the respective counties, the county assessment ratios in Illinois Tax Commission, Survey of Local Finance, Vol. VIII, Tax-Rate Limits and Assessment Ratios, 1925-1940 (1940), page 14, and Illinois Tax Commission, Nineteenth and Twentieth Annual Reports (1940), pages 20-21.

^cCook county omitted.

The relationship of land values and taxes per acre as expressed in taxes per \$100 value indicates that assessments per \$100 realty value increased from 66 cents in 1923 to \$1.16 in 1932, or 176 percent. The 1932 index of taxes per \$100 value was 25.5 percentage points above the level of the 1926-1930 base. Following the rather sharp decline from 1932 to 1934, the index of taxes per \$100 value has remained at approximately 8 percentage points above the 1926-1930 level.

The increase in taxes per \$100 value indicates that the declines in assessed valuations as indicated in Fig. 1 were partially offset by increases in the tax rate to meet the relatively fixed costs of local governments.

Taxes per acre, total assessed valuations of land and improvements, and farm realty values have followed similar trends from 1930 to 1941.¹ An analysis of farm property taxes on a statewide basis, however, fails to reveal the inequality with which these taxes were distributed among individual taxpayers. The problem of tax distribution among individual

¹According to the United States Bureau of the Census reports, the average tax per acre of full owners reporting real estate taxes was \$1.15 in 1930, and 99 cents in 1940. Taxes per \$100 of value, however, were \$1.10 in 1930 and \$1.23 in 1940. Preliminary release, Series Agr. S-2 No. 10.

properties involves not only a study of the levies of local taxing units but also a measure of the equity with which these taxes are borne by a given class of property among the total properties within each taxing unit.

Assessment ratios differ among farming-type areas. Assessment ratios in Illinois for 1940 varied among the individual counties from 25 percent in Du Page county to 73 percent in Pulaski county.¹ In 1935 an even greater spread was shown—30 percent in Du Page and 95 percent in Hardin county. When counties are grouped on a type-of-farming basis, some striking differences appear (Table 2).

In both 1935 and 1940 the assessment ratio in the 49 downstate counties was such as to indicate that they were assessed at about \$6.70 more on each \$100 farm realty value in 1935 and \$5.30 more in 1940 than in the 52 upstate counties.

That the assessment ratios were lower in 1940 than they were in 1935 is logical since the assessed valuations of land and improvements tended to be advanced less rapidly than farm realty values, as shown by the census and also by the Crop Reporting Service (Fig. 2).

By farming-type areas weighted averages of assessment ratios varied in 1935 from 37 in the Chicago dairy area (1) to 66 in the extreme southern fruit and vegetable area (9). Thus, \$100 worth of land would have been assessed \$29 more in Area 9 than in Area 1. In 1940, Area 1 again had the lowest ratio, 34, and Area 9 the highest ratio, 56, but the spread had narrowed so that \$100 worth of land would have been assessed at \$22 more in Area 9 than in Area 1. In 49 counties in the south half of the state, the ratios for 1935 and 1940 were 53 and 46, respectively, or \$6 more on each \$100 value of real estate in 1935 and \$5 more in 1940 than in the 52 counties in the northern half of the state.

It is to be noted that whereas the average state assessment ratio in 1935 was at 49, by 1940 it had fallen to 43. Thus, the full value was missed by about 51 percent in 1935 and by 57 percent in 1940.

Inequalities in assessments, however, have persisted in spite of lower assessment ratios resulting from more rapid advance in market value of land than in assessments.

While the absence of state levies on real estate may seem to cut down the need for uniform assessment ratios, that need persists because of other considerations. Among these are: (1) taxing units that overlap

¹An assessment ratio is a percentage computed by dividing the assessed valuation of some actually transferred properties by their known selling prices. Only bona fide voluntary transfers are considered. Average assessment ratios for Illinois counties for 1928, 1938, 1939, and 1940 are listed in Illinois Tax Commission, *Survey of Local Finance*, Vol. VIII, *Tax-Rate Limits and Assessment Ratios, 1925-1940* (1940), page 11.

county boundaries still are found in all parts of the state; (2) assessments and local tax rates play a part in the distribution of state financial assistance for schools, pensions for the blind, allowances for mothers of dependent children and emergency relief; and (3) railroads and other corporate properties which cross boundaries of counties and other taxing units, while assessed by a central state agency, have varied ratios applied according to their location in the state. With so little state-wide uniformity in the assessment of property, it is necessary to provide either for inter-county equalization of assessments or for adjustments in state grants proportional to departures from the average assessment ratio.

L. D. MALOTKY¹ and C. L. STEWART

SOME ECONOMIC ASPECTS OF THE USE OF INDUSTRIAL MATERIALS IN FARM-IMPROVEMENT CONSTRUCTION

The effective demand for any commercial product is determined mainly by personal preferences and the purchasing power of the potential buyers. The industrial producer, in addition, is concerned with the extent of the prospective market. Six million farms in the United States which have an approximate building value of 13 billion dollars represent a large potential market for new improvements and the repair or remodeling of old structures.

Aside from farm buildings, other constructions on the farm, especially fencing, drainage, and roadways, constitute additional large upkeep expenses. Somewhat overlooked in the minds of many people is the large annual outlay which farmers are now making for the purchase of limestone, rock phosphate, and other mineral fertilizers which have become more essential as our agriculture has reached mature or declining stages. The scope of this paper will not permit a discussion of the construction of hard roads and improved roads which have literally pulled the farmer out of the Illinois mud in recent years.

A survey was made of 100 farms in Champaign county, including a simple questionnaire which covered many points pertaining to farm construction. When one views the older structures still standing in this county, he is impressed by the use of glacier boulders, quarried rocks, and a very inferior burned brick for early foundations. In many of the buildings which are still in good repair, the framework especially was constructed of native, hardwood timber. Even in the days when they

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were built, the farmers chose their building materials in accord with their personal preferences and their economic means even though their choice was limited.

In approaching the future of farm construction, it is well to recognize that, in most of Illinois, we are still in the period of the life of the first major buildings which were built on the farms in the state. Materials used in the draining of Illinois land, which began about 50 years ago, have not yet deteriorated to the point of replacement in any large measure. Therefore, in looking into the future of farm-improvement needs, we must consider replacement needs, and we must even anticipate changes in practice which will take place in agriculture in the future and which will affect structural needs. Furthermore, as we review the depression period which has been severe in each of the past two decades following the first World War, we must recognize that farm people, in a large measure, have resorted to repairing existing equipment instead of incurring greater outlays for replacements which are badly needed from the standpoint of proper housing of crops, livestock, and the farm family itself. Many of the old structures were so well placed and so well constructed that they still lend themselves to remodeling and refinishing. However, such a policy is, at best, only an expediency and cannot be carried on indefinitely.

The past 25 years have been a period of marked change in farm practice. Within this period, the tractor has replaced the horse in a large measure on our Illinois farms. One of the problems, for example, that the farmer is facing is remodeling the old, large horsebarn for better adapted uses which are in line with current practices. In the farm home, the introduction of electricity on a large scale is leading to the modernizing of old residences or is leading people to look forward to the construction of new homes which will include electricity, running water, and furnace heat. Perhaps this construction will take many of the farmers' dollars for a few years' time, but with it will come a large amount of building construction.

Another item resulting in changed farm practices is the mechanization of our Illinois agriculture. This mechanization is leading to larger farms and the actual razing of many old farmsteads with the salvaged material being used for new structures or for the remodeling of old ones. The tendency to store farm grain under the present ever-normal granary plan and the introduction of soybean growing through a large part of Illinois have both led to a need for additional crib and bin storage. Instead of the horsebarn, we now need larger machinery sheds to house tractors, trucks, combines, and other large pieces of equipment which require considerable space.

The needs are evident. The farm market is a large one for industrial products of many kinds. The farmer is a good spender, but he must have the necessary purchasing power before he can acquire any of the improvements that he would like to have on his farm. Evidence based on more than 22,000 farm records which have been collected over a 14-year period in Illinois, shows clearly that, in the depression year of 1932 when farm income was cut to more than half of the 10-year average, the outlay for farm machinery dropped to 40 percent of what it was in 1929. Expenditures for farm improvements dropped to less than one-third of the 1926-1930 level. In depression periods, the necessary outlay for interest and payment of principal on the farmers' debts continues so that the outlay for new equipment and improvements on the farm drops more than does the farm income. When an approach is made to the farmers' programs for improving their farms and for the use they will make of various construction materials, we must recognize that, although they are good spenders, they are frequently limited by insufficient means with which to buy the things that they should have for the proper improvement of their farms.

What can we forecast with regard to any changes in the farmer's outlay of his income? Where the farmer formerly produced his own power in the form of horses and his own fuel to keep that power operating in the form of feed, he now has high annual out-of-pocket costs for replacement, repairs, and fuel for his mechanized equipment. He must meet these expenses regardless of the price he receives for his farm products. Although limestone, rock phosphate, and other fertilizers have been used over a considerable period of years, no large proportion of the farm land in Illinois has yet received the amount of improvement which it needs. The current AAA program has been a definite encouragement toward the application of limestone. In 1939, Illinois farm advisers estimated that about 1,800,000 tons of limestone were spread. The AAA program has also been encouraging the growing of more legumes which are widely needed in a permanent agricultural production program, and, as a result, many farmers are turning to more livestock production. As livestock production increases in volume it requires investment in shelter space on many farms as well as feed storage.

The farmer's dollar will tend to be invested where it will yield the maximum return in satisfaction or in profit. Satisfaction comes mainly in the home which the farm provides for the farmer and his family. Profit comes mainly in making the farm more efficient as a means of producing income. More efficiency may, in turn, lead to further development of the farm-improvement plan.

So many little items of investment are required on the farm that farmers generally tend to avoid constructing those improvements which require the highest initial cost in order to make the available capital cover the greatest number of needs. Such spending leads to a lot of farm-repair work on buildings which many times might better be replaced as a long-time policy. It also leads to the employment of cheaper and less durable materials in farm-building construction. Here, however, the disparity between the prices the farmer receives for his products and the prices he must pay for many manufactured products or for skilled labor leads him to give his attention to those items of investment where his labor can be used to advantage. Modern machinery gives the farmer more free time between rush periods in which he can do a large amount of construction work. Rather than pay the union wage scale, farmers are using farm labor to provide a large part of the improvements which go on the farm at the present time, with the result that the materials used are those most easily adapted to the skill, or lack of skill, of ordinary farm labor. A correction of the disparity in farm prices and other prices would do much to increase the farm market for building materials as well as for many other products.

For most farmers, any improvements which they put on the land must rate high from their utility and service value. Appearance in farm structures is secondary to utility. If skilled-labor wages remain at a high level, the farmer will go a long way in putting in his own improvements. This fact has a direct bearing on what products will be used in farm construction.

Perhaps the most useful approach to this matter of farm construction is to examine the preferences of farmers. The 100 farmers interviewed were asked about their preference in material for foundations, walls, floors, and roofs. For foundations on a variety of farm buildings, 88 preferred concrete; 4, concrete blocks; 1, brick; and 1, tile. For wall construction, 85 out of 93, or 92 percent, preferred wood. For floors, 90 percent preferred concrete where it could be used. For roofs, 39 preferred wood shingle; 25, galvanized iron; 18, asbestos shingle; 11, asphalt shingle; and only 1, slate.

More significant, however, are the farmers' reasons for their preferences. With regard to the use of concrete, 87 replies mentioned durability; 38, less skilled labor; 21, cheaper; 21, easily cleaned and sanitary; 20, rat and termite proof. Many who mentioned the cheaper construction of concrete had gravel available locally. Minor expressions for the preference of concrete included "familiar with its use," "easy to put up," "suitable for purpose," "water tight," and a "native

product." These reasons for preference quite overwhelm the seven preferences for concrete blocks. The 8 recorded reasons for preferring concrete blocks included durability, rat and termite proof, cheaper, less skilled labor, and thermal properties. Preferences for brick were mentioned in only four instances, but of these 100 farms few were considering the construction of houses. Six reasons for preference of tile were widely scattered, but included durability, cheapness, fireproof, thermal properties, and no paint needed. Wood construction preferences which apply to 85 references to walls and 9 references to floors included cheaper, familiar with its use, less skilled labor, easily remodeled and repaired, thermal properties, durability, suitability for purpose, attractive, and a native product. These preferences are given in the order of the number of men expressing preference for the reasons stated. The use of galvanized iron was practically limited to roofs, and the preferences given by farmers were (1) durability, (2) cheaper, (3) fireproof, (4) easy to put up, (5) rat and termite proof, and (6) less skilled labor. Wood shingles still lead as the preferred type of roof, and durability was the preference given in the majority of cases; others, however, included the items of thermal properties, cheaper, easy to remodel and repair, and wind resistance. About half as many preferred asbestos shingle to wood shingle; the reasons were durability and fireproof. Asphalt shingles were preferred in 11 cases mainly because of durability and fireproof properties, although some mentioned that they were cheaper. The materials preferred will vary with the kind of structure under consideration, but the reasons given indicate that farmers place durability and economy above all the other reasons.

This information shows that farmers' preferences are based on past experience. If changes are coming in the future, the farmer will have to be convinced that the changes are justifiable. A review of materials in existing improvements corresponds very closely with the expressed preferences, especially in the light of certain trends which are taking place now.

Sixty-one percent of all the houses on the 100 farms interviewed had brick foundations, but only 42 percent of the houses constructed in the last 25 years used brick as a foundation material. The other 58 percent have concrete and concrete-block foundations. This trend is even more pronounced in the construction of barns. Only 48 percent of all the barns on these farms have concrete foundations, but 33 out of 44, or 75 percent of all the barns built in the last 25 years, have concrete foundations.

Wood, on the other hand, has not been replaced as a side wall and su-

perstructure material. Slightly over 90 percent of all the buildings on the 100 farms surveyed were of wood construction, with no indication of any tendency to use some other material in preference to wood in the future. Houses constitute the only possible exception. One out of the 9 brick houses found was built 85 years ago; the other 8 have been built in the last 30 years, but they were constructed either after the old house burned down or in periods of relative agricultural prosperity. Asbestos shingles are gaining considerable favor as an exterior finish for houses. Extending concrete foundations to a height of 5 or 6 feet as a partial wall in barns has helped keep wood the primary superstructure material.

The reason that so few farmers use tile or clay products in general in farm-building construction may be found in part in the answers to the question, "What do you know about concrete blocks and building tile as building materials?" Sixty farmers said that they did not know enough about these products even to offer an opinion. Eighteen knew something about them, and only nineteen were fairly familiar with these products. If these building materials are superior products both physically and economically, farmers are not aware of it.

Another view of the need of replacement of buildings on central Illinois farms is the fact that the houses included in this survey of 100 farms averaged 40 years in age; barns, 34 years; corncribs and granaries, 26 years; machinery sheds, 21 years; poultry houses, 21 years; and garages, 21 years. If the ages of these buildings are compared with the years of useful life usually accepted where ordinary care is given to improvement, the conclusion must be drawn that the date for replacement of these buildings still lies in the future. An inspection of farm buildings shows many buildings whose original structure is still in good repair. Consequently, we must look forward, perhaps, to larger replacements in the future than we have yet experienced.

Additional evidence of further improvement work to be done on farms is the fact that 19 houses still have dirt floors in the basement. As far as barn construction is concerned, there are about an equal division of wooden floors, concrete floors, and dirt floors; but from the present trend, eventually most of them will be concrete. In cornerib and granary construction, most of the corneribs still have wooden floors although concrete is just coming into use. Only the newer constructed corneribs, for the most part, have concrete driveways. The few concrete-block corneribs found on these 100 farms were, in general, well liked by those who used them. In fact, some farmers felt that they could crib their corn a little earlier with safety than they could in wooden cribs. However, farmers were not seriously considering the construction of more concrete-block cribs because of the high initial cost involved.

The survey of the 100 farms included information on the construction work which has been completed during the past 10 years and that which is contemplated in the next 5 years. Over the past 10 years, the 100 farms showed major construction amounting to \$140,895. Nearly 29 percent of this construction went for 8 new houses; 15 percent, for the purchase of limestone; 10 percent, for new corncribs and granaries; 8 percent, for remodeling dwellings; nearly 7 percent, for paint; and 6 percent, for new barns. The remainder, with the exception of about 4 percent for the purchase of rock phosphate, went for remodeling and major repair work. However, these figures represent only major items in the farm-improvement program: the total annual outlay approaches half again as much.

An expenditure of \$112,035 is anticipated for construction in the next 5 years. Should the same rate of construction, however, be carried out over another 10-year period, as compared with the past 10-year period, farmers would like to spend 50 percent more for improvements than was spent in the past 10-year period. In the next 5 years, they would like to spend money at an increased rate for all types of construction, with the exception of paint and new roofs. This reveals the fact that farms are in need of major structures at a more rapid rate than they have been put on the farm during the past 10 years. Here the farmer's preference will be conditioned by his purchasing power. From the standpoint of farmer satisfaction, convenience, and utility, how much more desirable it would be if the immediate business activity and prospective increase in farm income in the next two or three years could be used for farm improvements rather than for bidding up the price of farm land.

The following data may be of some interest to the producer of construction products, but the question is, what conclusions can he draw from them?

1. A decided trend is noted toward the use of concrete for any purpose where it can be easily handled because it is durable, sanitary, rat and termite proof, and cheaper. Any competitor should remember these points.

2. If changes are to come in farm construction, the inertia for the use of wood will have to be overcome by any product from the earth which will tend to replace it, especially for wall and roof construction.

3. The farmer is unfamiliar with a number of construction products. He does not know whether he can handle them as readily as he can products with which he is acquainted. He needs to know what they will cost, what he can expect from them, how he can use them, and, above all, what their durability is. Salesmanship, therefore, will be needed if

greater use is to be made of concrete blocks, building tile, and other materials which the farmer might handle with farm labor.

4. The cost of construction is a primary item to the farmer, and his preference will be for those materials which he can handle most readily with unskilled labor.

5. The use of large amounts of concrete for floors, walls, and other purposes raises the question "Will any other paving substance be developed which the farmer can lay more readily over large surfaces, such as feeding floors and feed lots, in order to care for his livestock to best advantage?" The question of sanitation and durability will, of course, be of major consideration in substituting any other material for concrete, but this field can be further explored.

6. Sanitation is becoming a larger item on the farm in farm construction, partly because the farmer is accumulating a knowledge of how to avoid parasites and diseases and partly because we have new parasites and diseases to combat as our agriculture grows older.

Finally, in any change in construction on farms, the farmer needs informative education which will give him facts. The introduction of new materials in the past has led to dissatisfaction in so many instances that the farmer must be convinced that the new is better than the old. The prejudices which are created by a poor product which might just as well have been put on the market as a number one product are difficult to overcome. Since the farm market is indeed a large one, we need, in developing new materials, to develop them with the idea of building a reputation. Replacement is sure to follow.

H. C. M. CASE

Footnotes for the last page:

¹The first source is for annual data; the second is for current data from which tables may be brought to date.

²Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; subsequent monthly issues. ³Same as footnote 1. ⁴Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeograph of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁵Agricultural Situation, Bureau of Agricultural Economics, U. S. D. A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6436. ⁶Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁷Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. ⁸Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics, monthly mimeograph. ⁹Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ¹⁰Monthly Indexes of Non-Agricultural and National Income, Supplement, August, 1937, B.A.E.; Poultry and Egg Situation in Agricultural Situation. ¹¹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹²Federal Reserve Bulletin of Federal Reserve Board, September, 1933 and subsequent issues; Survey of Current Business, seasonally adjusted. ¹³Preliminary estimate. ¹⁴Illinois Crop and Livestock Statistics, Cir. 438; Monthly price release, State Agricultural Statistician.



TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural income ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	107	110	110
1930	86	88	89	94	83	87	93	99	89	91
1931	73	65	62	80	58	53	72	86	68	75
1932	65	48	41	69	43	43	62	68	47	58
1933	66	51	45	71	49	51	72	62	50	69
1934	75	65	61	80	57	55	69	71	64	75
1935	80	79	82	81	64	65	80	76	74	87
1936	81	81	86	80	74	82	103	89	86	103
1937	86	86	96	84	80	87	103	94	102	113
1938	79	69	69	80	72	81	101	88	78	88
1939	77	65	65	78	72	81	97	93	92	108
1940	78	68	69	79	78	90	113	100	105	122
1940 Aug.	77	66	69	79	71	80	101	101	106	121
Sept.	78	66	72	79	76	84	106	102	112	125
Oct.	79	66	72	79	80	98	124	103	116	129
Nov.	80	68	73	79	80	101	128	103	116	132
Dec.	80	70	74	79	86	105	131	106	122	138
1941 Jan.	80	72	78	80	86	90	112	108	121	139
Feb.	81	71	76	80	84	88	110	110	127	141
Mar.	82	72	76	80	88	94	118	110	131	143
Apr.	83	74	82	80	93	100	124	111	135	140
May	85	76	83	81	97	108	133	114	144	150
June	87	82	87	82	96	105	128	116	152	157
July	88	86	91	84	99 ¹¹	...	...	...	152	160
Aug.	90 ¹¹	87 ¹¹	92 ¹¹	85	...	...	...	...	...	161 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			August 1940	Current months		
	1924-29	1939	1940		June	July	August
Corn, bu.	\$.81	\$.43	\$.56	\$.60	\$.68	\$.69	\$.69
Oats, bu.	.42	.28	.32	.26	.33	.32	.32
Wheat, bu.	1.30	.67	.81	.66	.90	.94	.97
Barley, bu.	.66	.41	.46	.44	.50	.50	.52
Soybeans, bu.	1.94	.74	.82	.63	1.25	1.34	1.33
Hogs, cwt.	9.97	6.56	5.54	6.10	9.30	10.70	10.80
Beef cattle, cwt.	8.57	8.18	8.84	9.10	9.90	9.60	10.20
Lambs, cwt.	12.22	8.18	8.52	8.40	10.20	10.20	9.90
Milk cows, head.	78.00	63.00	65.00	66.00	80.00	84.00	82.00
Veal calves, cwt.	11.27	9.15	9.63	9.30	10.20	10.80	11.10
Sheep, cwt.	6.52	3.44	3.44	3.10	4.35	3.90	4.30
Butterfat, lb.	.42	.23	.27	.25	.34	.35	.34
Milk, cwt.	2.32	1.59	1.67	1.65	1.90	2.00	2.05
Eggs, doz.	.30	.16	.17	.13	.22	.23	.23
Chickens, lb.	.21	.13	.13	.13	.16	.17	.16
Wool, lb.	.36	.25	.30	.28	.40	.40	.37
Apples, bu.	1.59	1.07	1.14	1.05	1.25	.80	.75
Hay, ton	13.88	6.05	6.68	6.30	7.40	7.10	7.70
Potatoes, bu.	1.39	.80	.83	.75	.95	.90	.80

¹⁻¹²For sources of data in tables see page 134.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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CROP PRODUCTION COSTS IN 1940

For the past 28 years the University has assisted farmers, in selected areas of Illinois, in keeping cost figures on crops, livestock and livestock products produced on their farms. The results of the first 25 years, as they pertain to crop costs, were recently published in Illinois Bulletin 467. Farm cost figures have been kept on a number of farms in Champaign and Piatt Counties since 1920. The 1940 data from these east-central Illinois farms show a continuation of the rise in acre-costs that began after the low year of 1933.

Hourly costs of labor and power advancing. The increase in acre-costs of crops during the past seven years was the result, very largely, of the increase that took place in the hourly rates of labor, power and machinery (Table 1). The hourly hired labor wage paid in 1940 was nearly double the wage paid in 1933. The number of work horses per farm decreased from 6 in 1933 to 3 in 1940, yet the general-purpose two-plow tractors were used 100 hours more in 1933 than in 1940. This 18 percent decline in hours of the use obtained from general-purpose tractors came about through the carrying of more than one tractor on farms that had only one in 1933 and the acquisition of tractors by all the farm operators participating in the study even though some were operators of small farms. An increase in the investment in power-drawn machinery grew with the more general use of combines, corn pickers and pickup balers which accompanied the more general use of tractor power.

The operating expenses per acre of individual crops do not correspond exactly with the changes in hourly rates of man labor and power because seasonal conditions affect the time that is spent in the field, and the variations in crop yields often affect the time that must be spent harvesting the crop. However, in 1940 the operating expenses in growing corn was the highest of any year following the depression in 1933. The operating expenses in producing an acre of soybeans was higher in 1937 than in 1940 due entirely to the fact that the average farm price of soybean seed used on the farms in 1937 was \$1.25 a bushel more than in 1940.

1940 oat and soybean yield per acre not in line with preceding years. In Champaign and Piatt Counties the year 1940 was char-

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

TABLE 1. THE EFFECT OF INCREASING FARM WAGES AND POWER AND MACHINERY COSTS ON THE ACRE-COST OF CORN AND SOYBEANS, 1933-1940

Year	Cost per hour			Power-drawn machinery cost per acre	Operating expenses per acre ^a	
	Hired man labor	Horse labor	Two-plow general-purpose tractor		Corn	Soybeans
1933	\$.16	\$.07	\$.39	\$1.03	\$ 8.00	\$ 7.87
1934	.17	.10	.46	1.04	9.01	8.10
1935	.20	.11	.45	1.24	10.63	8.18
1936	.21	.15	.46	1.22	10.35	8.30
1937	.23	.16	.46	1.46	10.94	10.74
1938	.24	.15	.45	1.49	10.59	8.44
1939	.25	.16	.50	2.16	11.25	8.57
1940	.29	.20	.49	2.11	12.09	9.28

^aOperating expenses include all costs except the land charge.

acterized by subnormal rainfall. Nevertheless, favorable temperature conditions and timely showers during the critical periods resulted in an unusually large acre-yield of oats and brought the corn crop through in generally good shape. The soybean yield suffered from the dry September. As a result of weather conditions threshed oat yields were 69 bushels an acre; this compared with the average oat yield of 39 bushels per acre for the 5 years just preceding 1940. Weather had the opposite effect on the 1940 soybean yield per acre in these counties reducing it to 21.5 bushels as compared with a 28.5 bushel average acre-yield during the 5 years just preceding 1940. The acre-yields of the other crops on the farms were in line with what had been obtained as an average for the preceding years.

Cost of producing corn in Champaign and Piatt Counties in 1940.

The direct expenses in growing an acre of corn in 1940 up to the time of harvest was \$7.97 without including taxes or a land charge (Table 2). Of these growing expenses the cost of man labor was 16 percent, power and machinery 39 percent and seed and fertilizer nearly 24 percent. The net operating expenses per acre of corn in 1940 was \$12.09, when the expenses of harvesting were added to the growing expenses, and the taxes of \$1.43 an acre added and then the credit for stalk pasture subtracted from the total. The average estimated value of the land on which corn was grown was \$133 an acre. When interest at 5 percent on this land value was added to the net operating expenses it gave a net acre-cost of \$18.74. A yield of 56 bushels of corn an acre meant that it cost 33.5 cents a bushel to produce corn on the farms where cost figures were kept.

Cost of producing oats. The unusually high acre-yield of oats in

TABLE 2.—THE COST OF PRODUCING CROPS IN 1940 IN CHAMPAIGN AND PIATT COUNTIES, ILLINOIS

	Corn	Oats		Soybeans	Wheat	Alfalfa hay	Clover hay
		Combined	Threshed				
Acres in crop, per farm.....	80.5	26.9	26.4	73.2	28.0	9.2	19.6
Yield per acre, bu. or tons.....	56.0	66.5	69.4	21.5	26.6	2.4	1.3
Labor and power per acre							
Man hours.....	7.40	3.11	7.06	4.37	3.69	13.94	8.38
Horse hours.....	4.34	.99	4.11	.98	.42	7.60	3.63
Tractor hours.....	4.56	1.57	1.63	2.67	2.39	2.49	2.05
Truck miles.....	.31	.21	.14	.63	1.24	.49	.48
COST ITEMS PER ACRE							
Growing costs							
Man labor.....	\$ 1.27	\$.26	\$.27	\$.84	\$.45	.....	.....
Horse labor.....	.41	.09	.07	.15	.06	.....	.....
Tractor use.....	1.77	.36	.42	1.16	.94	.....	.....
Machinery.....	.93	.39	.22	.59	.39	.....	.....
Seed.....	.80	1.26	1.25	1.82	1.30	\$.75	\$.97
Manure and fertilizer.....	1.09	.56	.86	.61	1.14	.46	.32
General overhead.....	1.70	.76	1.32	1.02	.92	2.72	1.82
Total growing cost.....	\$ 7.97	\$ 3.68	\$ 4.41	\$ 6.19	\$ 5.20	\$ 3.93	\$ 3.11
Harvesting costs							
Man labor.....	\$.82	\$.59	\$ 1.74	\$.40	\$.50	\$ 4.12	\$ 2.55
Horse labor.....	.61	.09	1.07	.07	.....	1.68	.64
Tractor use.....	.57	.41	.49	.30	.41	1.32	1.24
Picker and pick-up baler ^a.....	.91	.....	.....	.....	.....	1.22	1.05
Combine.....	.....	.87	.....	1.22	.94	.....	.76
Threshing.....	.....	.....	1.53	.....	.....	.....	.....
Twine.....	.....	.....	.28	.....	.....	.....	.....
Machinery and truck use ^b.....	.01	.03	.01	.03	.08	1.14	.73
Total harvesting cost.....	\$ 2.92	\$ 1.99	\$ 5.12	\$ 2.02	\$ 1.93	\$ 9.48	\$ 6.97
Cost of growing and harvesting.....	\$10.89	\$ 5.67	\$ 9.53	\$ 8.21	\$ 7.13	\$13.41	\$10.08
Taxes.....	1.43	1.47	1.51	1.41	1.33	1.63	1.43
Interest at 5% on land value.....	6.65	6.73	6.67	6.61	6.80	6.74	6.48
TOTAL COST.....	\$18.97	\$13.87	\$17.71	\$16.23	\$15.26	\$21.78	\$17.99
INCOME PER ACRE							
Grain or seed.....	\$29.65	\$17.29	\$18.06	\$15.11	\$17.53	.....	\$ 2.02
Pasture.....	.23	.40	.38	.34	.28	\$.64	.73
Straw or hay.....	.....	.65	1.42	.....	.11	22.03	11.13
TOTAL INCOME.....	\$29.88	\$18.34	\$19.86	\$15.45	\$17.92	\$22.67	\$13.88
NET COST PER BUSHEL OR TON	\$.335	\$.193	\$.229	\$.738	\$.560	\$ 9.00	\$11.73

^aThe picker was used in harvesting corn and the pick-up baler in harvesting alfalfa and clover hay.

^bThis item includes machinery for alfalfa and clover hay and truck use only for the other crops.

the area in 1940 resulted in oats being produced at record low-cost of 19 cents per bushel. The lowest oat cost in any year prior to 1940 occurred in 1932 when it cost 24 cents on these farms. While in 1940 the gross cost was nearly \$4.00 an acre more to produce oats that were harvested with a binder and threshed than oats that were combined, the net cost, after deducting from total cost the value of straw saved, was about \$3.00 higher for the threshed oats. In 1938 and 1939, however, combined oats were produced at only about 90 cents an acre less than threshed oats after giving credit for the straw saved under both methods.

Soybean costs. Following 1932 the cost of growing and combining soybeans has shown a tendency to rise, and yet the operating expenses an

acre of soybeans in 1940 was \$5.25 less than on these farms in 1930. The net operating expenses in 1940, however, were nearly 75 cents above those of 1939. A contributing factor to this increase in expense was that more beans were planted in rows and cultivated than ever before. More time and power were required where beans were cultivated, but the $4\frac{1}{2}$ man hours, approximately one horse hour, and $2\frac{2}{3}$ tractor hours for an acre of soybeans grown in 1940 are very low when compared with the 12 man hours, 27 horse hours and $1\frac{1}{2}$ tractor hours used to grow and harvest an acre of soybeans on the farms in this group that raised soybeans in 1924.

About one-half of the men in the cost work owned their own combines. The combine cost for an acre of soybeans shown in Table 2 as \$1.22 is figured as follows: the average is taken of two figures, namely, (1) the estimated share of the custom rate paid that went for the use of the combine without the accompanying men and power where soybeans were custom combined, and (2) the cost of operating combines on those farms where the operator's own combine was used, again omitting men and power costs.

Cost of producing wheat. One-half of the farms included in the cost study in 1940 raised wheat. The crop has shown a rather consistent profit above production costs since 1932 but not as much profit as have corn, soybeans and alfalfa hay. Reductions in the cost of producing wheat that have occurred in the past twenty years have been in the harvesting costs. In 1940 the cost of combining an acre of winter wheat on this group of Champaign and Piatt County farms was \$1.93 where about one-half of the combines that harvested wheat were owned by the operator of the farm. The cost of binding and threshing an acre of wheat in 1926, the first year harvesting costs were listed as separate from growing costs, was \$5.48.

Cost of producing alfalfa and clover hay. One can see by the figures in Table 2 that the acre-yields of alfalfa and clover hay were not very good in this part of Illinois in 1940, and yet hay yields on the cost farms that year were well above their ten-year average. In 1940 there were 5 farms in the group on which alfalfa hay cost less than \$7.50 a ton; the acre-yield of alfalfa on these farms was three tons. Four farms that produced clover hay for less than \$8.50 a ton had an average yield of 1.6 tons an acre.

Wide variation in costs from farm to farm. The cost figures in Table 2 are averages of costs on 31 Champaign and Piatt County farms but there is a difference of \$7.17 an acre of corn between the farm with low acre-cost and farm with the high acre-cost. Variations in cost of as large a proportion of the average acre-cost occurred in the other crops

shown in Table 2. Occasionally differences in crop costs from farm to farm in the same locality are due to unavoidable causes, such as storms or insect damage; but in most cases they are the result of differences in managing ability of the farm operators and in the productivity of the land.

R. H. WILCOX

INCOME AND EXPENSES FOR 180 ILLINOIS FARM FAMILIES, 1940

Gross cash farm receipts, averaging almost \$5,500, were received by 180 Illinois farm families in 1940 (Table 1). These families kept complete family financial records by combining their farm account and home account books. These records were kept in cooperation with the county farm bureaus, county home bureaus, and the College of Agriculture of the University of Illinois. The farm operating expenses averaged \$3,775, which left a farm cash balance of over \$1,700. The nonfarm cash income of about \$340 added to the farm cash balance provided a total of over \$2,000 cash available to the family for living, investment and interest payments. Of this amount almost \$1,300, or slightly over \$100 per month, was used for living expenses.

As would be expected when the 180 families were grouped according to the net family earnings (the money available for adjusted cash living expenses, interest payments, and life insurance protection, plus the

TABLE 1.—AVERAGE CASH RECEIPTS AND CASH EXPENSES ACCORDING TO NET FAMILY EARNINGS, 180 ILLINOIS FAMILIES, 1940

Item	Average 1940	Net family earnings group				
		Under \$1 500	\$1 500 to \$2 500	\$2 500 to \$3 500	\$3 500 to \$4 500	\$4 500 and over
Number of records.....	180	33	57	46	19	25
Acres per farm.....	231	177	218	220	294	304
Total cash farm receipts.....	\$5 496	\$2 633	\$4 172	\$5 516	\$6 928	\$11 166
Total cash farm expenses.....	3 775	1 699	2 934	3 727	5 040	7 556
Farm cash balance.....	\$1 721	\$ 934	\$1 238	\$1 789	\$1 888	\$ 3 610
Nonfarm cash income.....	339	250	272	524	416	921
Cash available for living invest- ment and interest.....	\$2 060	\$1 184	\$1 510	\$2 313	\$2 304	\$ 4 531
Number in family.....	3.9	3.2	3.8	4.4	4.3	4.1
Number in household.....	4.2	3.4	3.9	4.7	4.4	4.4
Cash living expenditures.....	\$1 272	\$ 895	\$1 139	\$1 297	\$1 583	\$1 792
Other expenses.....	741	291	348	993	701	2 506
Total.....	\$2 013	\$1 186	\$1 487	\$2 290	\$2 284	\$ 4 298
Change in cash on hand.....	-23	+50	-7	+23	-22	-238
Amount unaccounted for.....	+24	+48	+16	+46	-2	-5

TABLE 2.—AVERAGE CASH RECEIPTS AND CASH EXPENSES ACCORDING TO NET CASH RECEIPTS, 180 ILLINOIS FAMILIES, 1940

Item	Average 1940	Net cash receipts groups				
		Under \$1 000	\$1 000 to \$2 000	\$2 000 to \$3 000	\$3 000 to \$4 000	\$4 000 and over
Number of records	180	17	71	42	20	30
Acres per farm	231	161	216	224	274	286
Total cash farm receipts	\$5 496	\$2 570	\$3 514	\$5 785	\$6 940	\$10 477
Total cash farm expenses	3 775	2 343	2 596	4 094	4 256	6 607
Farm cash balance	\$1 721	\$ 227	\$ 918	\$1 691	\$2 684	\$ 3 870
Nonfarm cash income	339	289	270	311	296	1 327
Cash available for living investment and interest	\$2 060	\$ 516	\$1 188	\$2 002	\$2 980	\$ 5 197
Number in family	3.9	3.0	3.8	4.0	4.6	4.3
Number in household	4.2	3.2	4.0	4.2	4.7	4.6
Cash living expenditures	\$1 272	\$ 703	\$1 026	\$1 409	\$1 541	\$ 1 807
Other expenses	741	138	220	571	1 251	2 942
Total	\$2 013	\$ 841	\$1 246	\$1 980	\$2 792	\$ 4 749
Change in cash on hand	-23	+321	+88	+23	-162	-454
Amount unaccounted for	+24	-4	+30	+45	+26	-6

value of farm-furnished goods and the change in net worth), large net income was associated with large gross income. With a larger cash balance it was possible for the families with higher net family earnings to enjoy higher standards of living as measured by the amount spent for living. The number of persons per family averaged more in the groups having larger net family earnings so more income was necessary to purchase the same amount of goods per member of the family.

Approximately the same relationship was noted between gross farm income, the number per family, the family living expenses, and the cash farm expenses when the records were divided according to the net cash receipts as when they were divided according to the net family earnings (compare Tables 1 and 2). Net cash receipts consist of the total cash receipts minus farm operating expenses, i.e. the amount of money available for living, investment, and interest payments.

When the tenure of the families was used as a basis for comparison, the average size of the families was about four for all of the groups. The owners had a higher average farm cash balance than any of the other groups (Table 3). By including the nonfarm income, the total cash available for living, investment, and interest was about the same for the owners and part owners. The unrelated tenants had incomes smaller than any other group although the acreage farmed was not much smaller than that farmed by the owner group. The landlord's share of the income

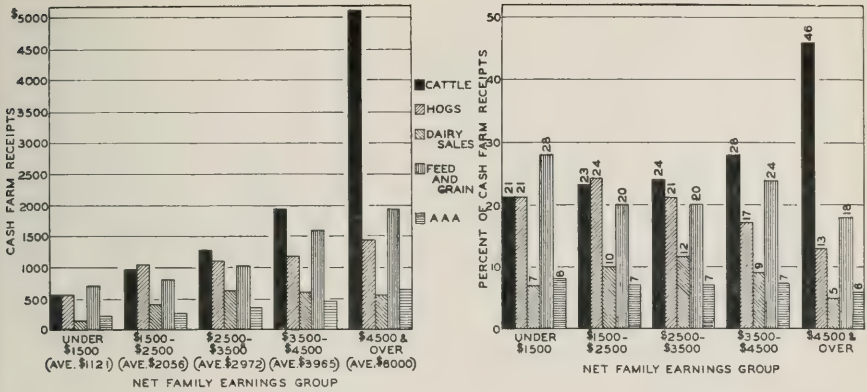


FIG. 1.—FARM INCOME FROM FIVE SOURCES ACCORDING TO NET FAMILY EARNINGS FOR 180 ILLINOIS FARM FAMILIES, 1940

produced on the farm was not included since only the operator's record was used.

The cash receipts from the sale of productive livestock made up over half of the gross farm income for each of the five net family earnings groups and also for the average of all 180 farms. The cash receipts from the sale of hogs in 1940 were as large or larger in the two lower groups than those from the sale of cattle (Fig. 1). Receipts from grain sales were the most important in the lowest earnings group. For the three

TABLE 3.—AVERAGE CASH RECEIPTS AND CASH EXPENSES ACCORDING TO TENURE, 180 ILLINOIS FARM FAMILIES, 1940

Item	Average 1940	Tenure groups			
		Owners	Part owners	Related tenants	Unrelated tenants
Number of records.....	180	48	50	45	37
Acres per farm.....	231	208	272	235	199
Total cash farm receipts.....	\$5 496	\$7 072	\$6 102	\$4 467	\$3 882
Total cash farm expenses.....	3 775	4 980	4 225	2 963	2 588
Farm cash balance.....	\$1 721	\$2 092	\$1 877	\$1 504	\$1 294
Nonfarm cash income.....	339	521	747	523	290
Cash available for living investment and interest.....	\$2 060	\$2 613	\$2 624	\$2 027	\$1 584
Number in family.....	3.9	3.8	4.0	4.0	4.0
Number in household.....	4.2	4.0	4.3	4.2	4.1
Cash living expenditures.....	\$1 272	\$1 377	\$1 343	\$1 274	\$1 037
Other expenses.....	741	1 175	1 277	738	419
Total.....	\$2 013	\$2 552	\$2 620	\$2 012	\$1 456
Change in cash on hand.....	-23	-15	+8	-9	-93
Amount unaccounted for.....	+24	+46	+12	+6	+35

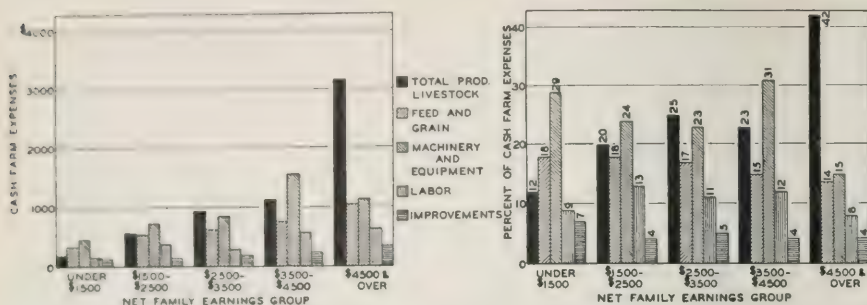


FIG. 2.—FARM EXPENSES FOR FIVE ITEMS ACCORDING TO NET FAMILY EARNINGS FOR 180 ILLINOIS FARM FAMILIES, 1940

higher groups and also for the average of all 180 farms, the cash receipts from cattle were larger than those from any other source. The profitableness of an enterprise is determined by the efficiency with which it is handled, its size, and the price relationships existing during the period under consideration. Thus, the favorable prices received for cattle during 1940 were reflected in the earnings of those families living on farms where large numbers of cattle were fed.

More cash was spent for machinery and equipment than for any other single item, except in the highest net family earnings group. In this group the amount of money spent for cattle was more than twice that spent for machinery. When the cash expenses for all productive livestock are added together (Fig. 2), they exceed the cash machinery costs slightly

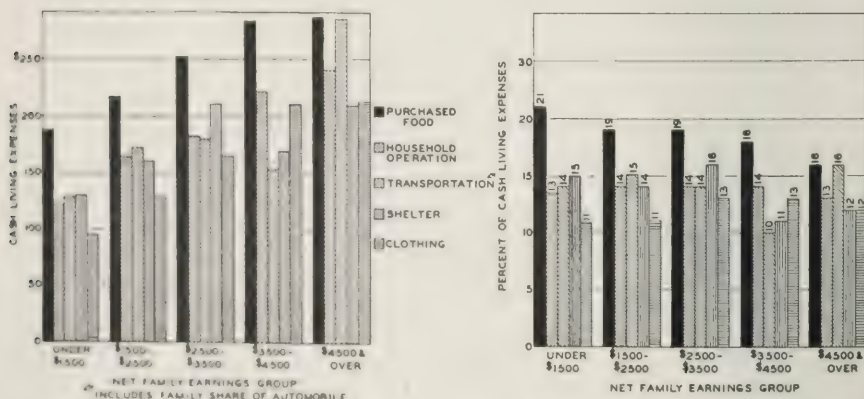


FIG. 3.—LIVING EXPENSES FOR FIVE ITEMS ACCORDING TO NET FAMILY EARNINGS FOR 180 ILLINOIS FARM FAMILIES, 1940

in the \$2,500-\$3,500 net family earnings group and considerably in the \$4,500 and over group. The expenses for feed and grain increased along with an increase in improvement and labor costs as the net family earnings increased. Hired labor, for example, increased from \$159 to \$626.

The amount of money spent for purchased food, household operation (including fuel, power, telephone, supplies, paid service and similar items), and clothing showed a marked increase as the net family earnings increased (Fig. 3). The picture is not so clear for the family share of the transportation costs and the expense for shelter. Both of the latter items vary from year to year because of infrequent purchases of automobiles, repair of residences, and building new homes. In general, these records indicate that, as would be expected, the standard of living, as measured by family expenditures, increases as the net family earnings increase and as the net cash receipts increase.

L. W. SCHRUBEN

CANADA'S WARTIME WAGE POLICY FOR PREVENTING INFLATION¹

People in the United States are now face to face with two important facts: Money wages are now at the highest level in the history of our country and are increasing. The national income, of which about two-thirds is wages, in 1941 is expected to exceed that in 1929 when it was \$82,000,000,000. Along with this, however, is the fact that the diversion of productive capacity from peace-time goods to the production of airplanes, tanks, munitions, ships, and other defense goods has effectively stopped further increases in total consumption of wage-earners. Automobile production, for example, for the coming year will be about half that of the past year. It is an accepted fact that it is physically impossible for any country to devote a substantial part of its industrial capacity to the production of defense goods and at the same time have more goods available for general consumption. At the present time even though there are more dollars from money wages, prices and living costs are rising while real wages are decreasing since the volume of peace-time goods is decreasing. With wages constituting a major part of our national income, one question which arises is: What wage policy can be followed which will help to stop or limit inflation?

One practical answer to this question can be found in Canada's wartime wage policy initiated under their Industrial Disputes Investigation

¹Facts pertaining to the operation of the Canadian wartime wage policy were obtained from an article issued by the Department of Labor, Canada, as a supplement to the Labor Gazette of July, 1941.

Act with amendments by order in council of June 27, 1941. The order in council as amended prescribes a wartime wage policy for all industries engaged in war work and recommends this policy for other industries.¹ This policy contains two main provisions:

Except in certain special circumstances, the highest wage rate established between 1926 and December 16, 1940, are to be regarded as fair and reasonable; they may be restored, if necessary, and maintained but not increased.

Such wages may be supplemented by a separate cost of living bonus usually of \$1.25 per week for each rise of 5 percent in the cost of living in order to safeguard the workers against increases in the basic necessities of life.²

In essence this wage policy does three things. In the first place, it sets a ceiling on wage rates but at the highest level ever reached in the country. In the second place it sets a floor, below which wages may not fall, and finally by providing for cost of living bonuses, it protects the workers' basic standard of living from being undermined by increases in cost of living.

The cost-of-living bonus is based upon changes in cost of living since August, 1939, as measured by the cost of living index prepared by the Dominion Bureau of Statistics for Canada as a whole. If wages have been adjusted to changes in living cost since August, 1939, further adjustments are made from the effective date of the last adjustment.

In addition to its well-defined wage policy, Canada has taken definite steps to solve the problem of labor strikes. Under a ruling also established this past summer, hereafter all strikes on defense projects are to be considered illegal unless a strike is voted by a majority ballot of the workers in an election supervised by the Department of Labor.

In attempting to determine the applicability of Canada's wartime wage policy to the United States, one question which naturally arises, is: How does the economic situation in this country compare with that in Canada? Is this about the same or are there major differences which would have to be taken into account?

A review of money wage rates, cost of living, employment, and pay-rolls, indicates that the underlying economic conditions in the two countries are essentially the same. Average money wages are at a very high level in both the United States and Canada. In July, 1941, the average weekly earnings of wage earners of 25 manufacturing industries in this country of \$33.70 per week was close to the highest on record, being 15 percent higher than for the peak year of 1920 when the cost of living was 36 percent higher than today. In Canada present wage rates

In October, 1941, this policy was extended to include all industries, including agriculture.

¹Canada's Wartime Wages Policy, supplement to Labor Gazette, Department of Labor, Canada, July, 1941, p. 3.

TABLE 1.—CHANGES IN THE COST OF LIVING IN THE UNITED STATES
AND CANADA SINCE AUGUST, 1939
(August, 1939 = 100)

Year and month	United States ^a	Canada ^b	Year and month	United States ^a	Canada ^b
1939			1940		
August.....	100.0	100.0	July.....	.....	104.8
September.....	102.0	100.0	August.....	.....	105.1
October.....	.....	102.7	September.....	101.8	105.6
November.....	.....	103.0	October.....	101.6	106.2
December.....	101.0	103.0	November.....	101.5	106.9
1940			December.....	102.1	107.1
January.....	.....	103.0	1941		
February.....	.....	103.0	January.....	102.2	107.4
March.....	101.2	103.8	February.....	102.2	107.3
April.....	.....	103.8	March.....	102.6	107.3
May.....	.....	104.1	April.....	103.7	107.7
June.....	101.9	104.1	May.....	104.4	108.5
			June.....	106.1	109.6
			July.....	106.5	111.9
			August.....	107.5	113.7
			September.....	109.6	.....

^aFrom United States Department of Labor.

^bFrom Dominion Bureau of Statistics.

are the highest in its history with the exception of 1920 when wages were about 2 percent higher and the cost of living 50 percent higher than now. Factory wages in the United States are now 18 percent *higher* than in 1929 in contrast with living costs which are 13 percent *lower* than the 1929 level. In Canada, wage rates are about 4 percent higher than in 1929 while living costs are about 10 percent lower.

Employment in both countries is at an all-time peak, being about 25 percent higher than the 1929 level in the United States and 23 percent higher in Canada.

Changes in the cost of living in the United States from 1914 to 1922 and from 1939 to date were shown in the August, 1941, issue of *Illinois Farm Economics*. Living costs in July, 1941, were 6.5 percent higher in the United States and 11.9 percent higher in Canada, than in August, 1939 (Table 1).

In Canada, half of the resources are now devoted to war purposes while production for defense purposes in this country constitutes about one-third of the total production.

With an understanding of the dangers involved in a runaway inflation and a recognition of the similarity of economic conditions in the United States and Canada, it is suggested that careful consideration be given to the desirability of adopting a wage policy in this country for the duration of our defense program similar to that which has been adopted in Canada.

R. W. BARTLETT

TABLE 3.—DISTRIBUTION BY UNITS OF THE VOLUME OF CLASS I MILK SOLD IN THE DIFFERENT SALES UNITS THROUGH STORES WHICH RAISED RETAIL PRICES IN OCTOBER, 1940, APPROXIMATELY ONE-HALF CENT PER QUART ABOVE THE OCTOBER, 1939, PRICE, ST. LOUIS SALES AREA

Sales units	October, 1939			October, 1940			Percent change
	Volume of sales		Percent of total Class I sales	Volume of sales		Percent of total Class I sales	
	In units	In quarts		In units	In quarts		
Grade A quarts.....	24 327	24 327	53.64	14 287	14 287	45.66	-41.3
Grade A ½ gallons.....	5 298	10 596	25.54	4 388	8 776	28.04	-17.2
Homogenized quarts.....	5 622	5 622	13.55	6 411	6 411	20.49	+14.0
Homogenized ½ gallons.....	190	380	.92	666	1 332	4.26	+250.5
Grade A pints.....	555	278	.67	444	222	.71	-20.1
Grade A gallons.....	32	128	.31	31	124	.40	-3.1
Special grade A quarts.....	65	65	.16	92	92	.29	+41.5
Homogenized gallons.....	13	52	.13	12	48	.15	-7.7
Guernsey quarts.....	35	35	.08	(None sold in this month)			-100.0
Total.....	.....	41 483	100.00	.....	31 292	100.00	-24.6

In the first study the store price of milk to consumers was obtained by a survey of all stores in three St. Louis census districts for November and December, 1940. Of the total of 227 stores visited, 128 were in a low income area; 48, in a medium; and 51, in a high income area. The distribution of these stores by types, as well as by income areas, is shown in Table 1. The most important fact shown in this table is the large number of stores in the low-income area. There was at least one store within easy walking distance from most homes in this area.

TABLE 4.—DISTRIBUTION BY UNITS OF THE VOLUME OF CLASS I MILK SOLD IN THE DIFFERENT SALES UNITS THROUGH STORES WHICH DID NOT INCREASE 1940 RETAIL PRICES OVER THOSE OF 1939; ST. LOUIS SALES AREA, OCTOBER, 1939, AND OCTOBER, 1940

Sales units	October, 1939			October, 1940			Percent change
	Volume of sales		Percent of total Class I sales	Volume of sales		Percent of total Class I sales	
	In units	In quarts		In units	In quarts		
Grade A quarts	72 500	72 500	51.27	81 643	81 643	52.10	+12.6
Grade A ½ gallons	31 229	62 458	44.17	28 231	56 462	36.03	—9.6
Homogenized quarts	4 816	4 816	3.40	14 679	14 679	9.37	+204.8
Grade A pints	1 391	696	.49	1 480	740	.47	+6.3
Grade A gallons	124	496	.35	443	1 772	1.13	+257.3
Homogenized ½ gallons	131	262	.19	557	1 114	.71	+325.2
Special grade A quarts	99	99	.07	68	68	.04	—31.3
Guernsey quarts	84	84	.06	135	135	.09	+60.7
Homogenized gallons	(None sold in this month)			24	96	.06	.....
Total . . . . .	.....	141 411	100.00	.....	156 709	100.00	+10.8

TABLE 5.—EFFECT OF A PRICE INCREASE UPON STORE SALES OF FLUID MILK AS COMPARED WITH VOLUME OF SALES WHEN THE PRICE WAS NOT RAISED, OCTOBER, 1939, AND OCTOBER, 1940^a
(Cents per quart)

Items measured	Stores which did not increase the price of milk ^b	Stores which increased the price of milk ^b	All stores
Weighted average milk price to consumers			
1939	10.77	11.05	10.83
1940	10.93	11.62	11.05
Price increase	.16 ^c	.57	.22
Total Class I milk sales (quarts)			
1939	141 411	41 482	182 893
1940	156 709	31 292	188 001
Percent change	+10.8%	-24.6%	+2.8%

^aBased upon sales through 306 St. Louis stores in October, 1939, and 275 stores in October, 1940.

^bThe number of stores in the different groups is not given since data obtained were confidential and to furnish this information might give some clue to the identity of the stores supplying it. The number of stores are not included in succeeding tables where stores are divided into groups. Stores were never divided into more than two groups.

^cThis increase caused by more sales of homogenized milk in 1940 selling at a higher price than standard milk both in 1939 and in 1940.

The store price to consumers per quart for regular grade A milk ranged from 8 to 14 cents in November, 1940, and from 10 to 14 cents in December, 1940 (Table 2). The average price for all areas was 11.88 cents per quart in November, compared with 12.39 cents in December. This difference was due to an increase of $\frac{1}{2}$ cent per quart in the wholesale price of most milk delivered to stores.¹

Stores in the low-income area sold milk for lower prices than stores in the other areas. In November, the average price in this poorer district was about 1 cent lower than the average of the other areas. In December, the difference in average prices was only about .6 of a cent, most of the stores in the low income area having raised their prices to pay for the higher-cost milk.

Another study made for 306 retail stores in St. Louis in October, 1939, and 275 retail stores in about the same sales area in October, 1940, showed the following facts:

1 Sales of milk were 24.6 percent less in October, 1940, than in October, 1939 (Table 3) at stores (about $\frac{1}{7}$ of total number) which increased retail prices.

2 Sales of milk at stores which did not increase prices to consumers were 10.8 percent higher in October, 1940, than a year earlier (Table 4). Total milk sales for stores included in this study were 2.8 percent higher in October, 1940, than in 1939 (Table 5). This increase in sales can be

¹As reported by a number of operators.

TABLE 6.—DISTRIBUTION BY UNITS OF THE VOLUME OF CREAM SOLD IN THE DIFFERENT SALES UNITS THROUGH STORES WHICH LOWERED RETAIL CREAM PRICES IN OCTOBER, 1940, APPROXIMATELY 1½ CENTS PER HALF PINT BELOW THOSE OF OCTOBER, 1939, ST. LOUIS SALES AREA

Sales units	October, 1939			October, 1940			Percent change
	Volume of sales		Percent of total cream sales	Volume of sales		Percent of total cream sales	
	In units	In ½ pints		In units	In ½ pints		
Pints..... 24%	3 863	7 726	70.87	9 156	18 312	74.56	+137.0
½ pints..... 18%	1 880	1 880	17.25	2 115	2 115	8.61	+12.5
¼ quarts..... 32%	785	1 047	9.60	2 584	3 445	14.03	+229.2
Quarts..... 18%	51	204	1.87	101	404	1.64	+98.0
½ pints..... 32%	37	37	.34	284	284	1.16	+667.6
Quarts..... 32%	2	8	.07	None sold in this month			-100.0
½ pints..... 24%	None sold in this month			None sold in this month			.....
¼ pints..... 24%	None sold in this month			None sold in this month			.....
Sour cream..... pints	None sold in this month			None sold in this month			.....
Total.....	.....	10 902	100.00	.....	24 560	100.00	+125.3

attributed primarily to higher purchasing power in 1940, department store sales being 4 points higher in October, 1940, than a year earlier, while factory payrolls were 13 points higher.¹ The distribution of sales by units for 1939 and 1940 is shown in Tables 3 and 4.

3. One group of stores which reduced cream prices an average of 1.64 cents a half pint increased sales 125 percent over those of a year

TABLE 7.—DISTRIBUTION BY UNITS OF THE VOLUME OF CREAM SOLD IN THE DIFFERENT SALES UNITS THROUGH STORES WHICH DID NOT LOWER RETAIL PRICES IN OCTOBER, 1940, BELOW THOSE OF OCTOBER, 1939, ST. LOUIS SALES AREA

Sales units	October, 1939			October, 1940			Percent change	
	Volume of sales		Percent of total cream sales	Volume of sales		Percent of total cream sales		
	In units	$\frac{1}{2}$ pints		In units	$\frac{1}{2}$ pints			
$\frac{1}{2}$ pints.....	18%	11 680	11 680	62.87	9 789	9 789	60.24	-16.2
$\frac{1}{2}$ pints.....	32%	3 588	3 588	19.31	3 940	3 940	24.25	+9.8
$\frac{1}{2}$ pints.....	24%	2 432	2 432	13.09	1 975	1 975	12.15	-18.8
Quarts.....	18%	174	696	3.75	90	360	2.22	-48.3
$\frac{1}{4}$ pints.....	24%	252	126	.68	None sold in this month			-100.0
Sour cream.....	pints	28	56	.30	93	186	1.14	+232.1
Pints.....	24%	None sold in this month			None sold in this month			
$\frac{1}{2}$ quarts.....	32%	None sold in this month			None sold in this month			
Quarts.....	32%	None sold in this month			None sold in this month			
Total.....		.....	18 578	100.00	.....	16 250	100.00	-12.5

¹From statistical reports of the St. Louis milk market administrator.

TABLE 8.—EFFECT OF A PRICE DECREASE ON STORE SALES OF CREAM AS COMPARED WITH VOLUME OF SALES AT STORES NOT LOWERING THE PRICE IN OCTOBER, 1939, AND OCTOBER, 1940
(Cents per $\frac{1}{2}$ pint)

Items measured	Stores which did not lower the retail price of cream	Stores which decreased the price of cream	All stores
Weighted average cream price to consumers			
1939	16.34	11.73	14.62
1940	16.78	10.09	12.72
Price change	+ .44	-1.64	-1.90*
Total cream sales—($\frac{1}{2}$ pints)			
1939	18 578	10 902	29 480
1940	16 250	24 560	40 810
Percent change	-12.5%	+125.3%	+38.4%

*This is greater than the difference in the cream price for stores which decreased cream prices in 1940 as a result of the large volume of cream sold at the low store prices in 1940.

earlier (Table 6). For stores where no price reduction was made, cream sales in October, 1940, were 12.5 percent lower than in October, 1939 (Table 7). For all stores, cream sales increased 38 percent during the period covered by this study (Table 8).

4. Handling margins exacted by dealers for processing milk at the plant and delivering it to stores in both 1939 and 1940 were higher than the Class I price paid to farmers (Table 9). The Class I price for the Octobers in both 1939 and 1940 averaged 4.95 cents per quart, compared with the dealers handling margin of 4.98 cents per quart in October, 1939, and was increased to 5.48 cents per quart in October, 1940.

5. Store margins for handling milk decreased from an average of .9 cent per quart in October, 1939, to .62 cent per quart in October, 1940.

TABLE 9.—WEIGHTED AVERAGES OF STORE PRICES TO CONSUMERS, HANDLING MARGINS, AND CLASS I PRICES TO PRODUCERS FOR MILK SOLD AT A GROUP OF ST. LOUIS STORES COVERING ABOUT THE SAME SALES AREA IN OCTOBER, 1939, AND OCTOBER, 1940*
(Cents per quart)

Item	1939	1940	Net change
Price to producers	4.95	4.95	0
Handling margins			
Plant and delivery to store	4.98	5.48	+ .50
Store .....	.90	.62	- .28
Store price to consumer	10.83	11.05	+ .22

*This study is based on prices and sales at 306 stores for October, 1939, and 275 stores for October, 1940. Due to the replacement of a number of small stores by large super-markets, the 275 stores in 1940 served essentially the same sales area as the 306 stores in 1939.

Facts disclosed by this study show that margins exacted by St. Louis dealers for processing and bottling milk at plants and delivering milk to stores were from $2\frac{1}{3}$ to $3\frac{1}{3}$ cents per quart higher than similar costs for four markets reported in previous studies.¹ These earlier studies showed wholesale distribution costs for specific markets in 1939 to be as follows:

	<i>Cents per quart</i>
San Bernardino, California.....	2.16
Riverside, California.....	2.37
An Ohio city.....	2.60
New York City.....	2.64

Low-cost distribution in these markets was affected by the Lucerne Cream and Butter Company, a subsidiary of the Safeway Stores, in the San Bernardino and Riverside markets; by the Kroger Baking Company in the Ohio city; and by the Dairy Sealed, Inc., a subsidiary of the Borden Company, in New York City. Based upon the experience of these companies, it is recommended that consideration be given to establishing a system of low-cost distribution in the St. Louis market, which should include the following:

1. The establishment of a dairy plant specifically designed for distributing milk to stores in paper containers.
2. The use of exclusive stops—only one dealer per store.
3. The sale of a large volume of milk per store at low prices.
4. The distribution of a large volume of milk per route.

O. E. BROWN

ECONOMIC ASPECTS OF FOOD-FOR-DEFENSE

Farmers should give careful attention to the economy of production in meeting the Food-for-Defense goals. Important increases in the quantity of food products can be attained by doing a better grade of work in regular production. With scarcity of labor there is danger that many farmers will do a low grade of work. For example, scarcity of labor may be the cause of less care to young animals at critical times or of carelessness in attention to the details of sanitation.

The success of many lines of farm production depends upon attention to small details. Hundreds of little practices on the farm enter into the successful operation of every phase of the farm business. Bulletin 444 of the University of Illinois, entitled "Farm Practices and Their Effects on Farm Earnings," analyzes many which are essential to successful farm operation. One way of helping to meet the situation immediately ahead is to make a careful list of farm practices essential to economical produc-

¹*Illinois Farm Economics*, November, 1940, p. 424, Fig. 3.

tion. Planning at the present time for things which should be done at definite times during the coming year will help to use available labor to advantage and will enable the operator to fit many farm practices into the regular farm routine.

Planning is essential to good farm operation at any time, but it is of vital importance in periods of a shortage of labor. Having equipment in good condition so that repairs will not have to be made during rush work periods is one of the best examples of using labor to advantage. With the present restrictions on the use of steel and other materials which are used in making farm machinery and repair parts, it is advisable to order the necessary repairs when machinery is put away for the winter so that a rush season does not find the operator losing valuable time because of his inability to get necessary replacements.

Some farmers are being misled by the emphasis on Food-for-Defense. Those who are unacquainted with certain lines of production may feel it a patriotic duty to enter those lines of production. The experiences of the first World War may be cited to advantage here. At that time we increased the production of certain food products. This was accomplished, mainly, by an increase in the output of those farmers already efficient in producing these products. For example, an increased output of dairy products can be accomplished with the cows already on farms. In other words, the number of cows cannot be immediately increased but better feeding of the cows now on hand and keeping older cows for another year or two of production will be the principal ways in which the increased production will be accomplished. Such adjustments can usually be made without large expenditures for new equipment. In some areas where there are herds of grade cows used largely to produce feeder calves, some farmers may choose to milk the cows and raise the calves with a minimum of milk. In these ways we increased our dairy production during the first World War. From that experience we should learn the lesson that the most economical way of increasing the production of livestock and livestock products is for the man who is already experienced in production to increase his output through better practices and through enlarging enterprises in which he is already engaged. A 20 percent increase in number of hogs for the man who is already producing 40 litters of pigs a year will not seriously interfere with his production plans. On the other hand, for a man entirely inexperienced in hog production the production of 10 litters of pigs in a year may lead to rather disastrous results unless, at some time, he has had experience in raising pigs or unless he is willing to give careful attention to all details that go along with successful pork production.

The farmer is not asked to go to the extreme of "all out for food production" by putting all of his land into highly soil-depleting crops. If his land is subject to serious erosion he should not plow up those fields which ought to be left in hay or pasture. Efficient production is desired and efficient production is based upon proper soil tillage, proper soil treatment and careful choice of the varieties of crops which will give large yields. The highly productive, well managed farm will be in a good position to weather post-war reverses.

It is important to increase food production to meet immediate needs but our Food-for-Defense program must also include a plan of production of food for the years ahead. It will require some time for the world to lapse into a normal production program again and, in the meantime, many hungry people will need to be fed. The farmer must keep in mind, therefore, that the success of this whole Food-for-Defense program rests upon his ability to maintain the efficiency of his production plant.

H. C. M. CASE

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸Monthly Indexes of Non-Agricultural and National Income, Supplement, August, 1937, B.A.E.; Poultry and Egg Situation, or Agricultural Situation. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933 and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural income ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ⁴	Prices paid by farmers ⁴	U. S. in money ⁶	Illinois				
	All commodities ¹	Farm products ²				In money ⁵	In purchasing power ⁷			
Base period	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	107	110	110
1930	86	88	89	94	83	87	93	99	89	91
1931	73	65	62	80	58	58	72	86	68	75
1932	65	48	41	69	43	43	62	68	47	58
1933	66	51	45	71	49	51	72	62	50	69
1934	75	65	61	80	57	55	69	71	64	75
1935	80	79	82	81	64	65	80	76	74	87
1936	81	81	86	80	74	82	103	89	86	103
1937	86	86	96	84	80	87	103	94	102	113
1938	79	69	69	80	72	81	101	88	78	88
1939	77	65	65	78	72	81	97	93	92	108
1940	78	68	69	79	78	90	113	100	105	122
1940 Sept.	78	66	72	79	76	84	106	102	112	127
Oct.	79	66	72	79	80	98	124	103	116	130
Nov.	80	68	73	79	80	101	128	103	116	134
Dec.	80	70	74	79	86	105	131	106	122	139
1941 Jan.	80	72	78	80	86	90	112	108	121	140
Feb.	81	71	76	80	84	88	110	110	127	144
Mar.	82	72	76	80	88	94	118	110	131	147
Apr.	83	74	82	80	93	100	124	111	135	144
May.....	85	76	83	81	97	108	133	114	144	154
June.....	87	82	87	82	96	105	128	117	152	159
July.....	88	86	91	84	98	...	...	118	153	160
Aug.....	90	87	94	85	102 ¹¹	...	...	119 ¹¹	157	160 ¹¹
Sept.....	92	91	99	86	...	...	...	...	...	...

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			September 1940	Current months		
	1924-29	1939	1940		July	August	September
Corn, bu.	\$.81	\$.43	\$.56	\$.62	\$.69	\$.69	\$.71
Oats, bu.	.42	.28	.32	.27	.32	.32	.40
Wheat, bu.	1.30	.67	.81	.63	.94	.97	.96
Barley, bu.	.66	.41	.46	.37	.50	.52	.52
Soybeans, bu.	1.94	.74	.82	.69	1.34	1.33	1.61
Hogs, cwt.	9.97	6.56	5.54	6.14	10.70	10.80	11.10
Red cattle, cwt.	8.57	8.18	8.84	7.49	9.60	10.20	9.36
Lambs, cwt.	12.22	8.18	8.52	7.59	10.20	9.90	9.84
Milk cows, head.	78.00	63.00	65.00	61.10	84.00	82.00	75.70
Veal calves, cwt.	11.27	9.15	9.63	9.06	10.80	11.10	11.26
Sheep, cwt.	6.52	3.44	3.44	3.68	3.90	4.30	5.25
Butterfat, lb.	.42	.23	.27	.27	.35	.34	.37
Milk, cwt.	2.32	1.59	1.67	1.82	2.00	2.05	2.37
Eggs, doz.	.30	.16	.17	.21	.23	.23	.30
Chickens, lb.	.21	.13	.13	.14	.17	.16	.16
Wool, lb.	.36	.25	.30	.28	.40	.37	.36
Apples, bu.	1.59	1.07	1.14	.76	.80	.75	.85
Hay, ton	13.88	6.05	6.68	6.98	7.10	7.70	7.94
Potatoes, bu.	1.39	.80	.83	.60	.90	.80	.64

For sources of data in tables see page 155.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

November, 1941

Number 78

RELATIVE RETURNS FROM SOYBEANS, CORN, AND OATS

Soybeans and corn. Comparing the returns from corn and soybeans involves consideration of yields per acre, prices, and costs. The average yields per acre of soybeans by counties for the four years, 1937-1940, are shown in Figure 1. Generally speaking, north of a line drawn from Alton to Mattoon the yields have averaged 19 bushels per acre or better. Similar county averages for corn are shown in Figure 2: In general, north of this same line, corn yields have averaged from 40 to 55 bushels per acre. In Figure 3 is shown the ratio between the yields of the two crops expressed as the number of bushels of corn divided by the number of bushels of soybeans produced on an acre. South of the above line this ratio commonly ranged from 2.3 to 2.9 bushels of corn per bushel of soybeans. The few exceptions probably reflect errors in estimating yields where only small acreages of soybeans were planted. North of this line and eastward from Macoupin and Sangamon counties lies an area about three counties wide where the ratio is most favorable to soybeans: 2.2 bushels of corn per bushel of soybeans in most counties. This belt seems to bend up along the east side of the state. To the north and west of this belt the ratio averages about 2.5 bushels of corn per bushel of soybeans. As would be expected, more soybeans are grown in the counties where this ratio is approximately 2.2 (See Figure 4). For the four years, 1937-1940, 13 of these counties grew 30 or more acres of soybeans per 100 acres of corn as did one in western Illinois, Hancock, with a slightly higher corn-soybean yield ratio. In addition 18 counties, chiefly to the north and west of this area of heavy concentration, where the yield ratios were mostly 2.3 or 2.4, grew 15 or more acres of soybeans per 100 acres of corn. To the south and north, where the yield ratios were higher for corn, fewer soybeans were grown.

Do the relatively higher yields of soybeans explain this greater concentration in certain areas or do the higher yields merely reflect longer experience in growing beans? Data are not at hand to answer this but it seems likely that the fundamental economic law of comparative advantage has worked in this situation: "People produce those things for which they have the greatest relative advantage or least relative disad-

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

crease acreages in grass crops—hay and pasture, which the livestock farmers in the area knew how to use to advantage.

It must be recognized, of course, that AAA payments to hold down acreages of corn have been a primary factor in increasing acreages of soybeans. This is evident from the fact that a bushel of soybeans from 1937-1940 was worth nearer 1.5 times than 2.2 times the price of a bushel of corn. As long as the acreage of corn is held down by AAA payments

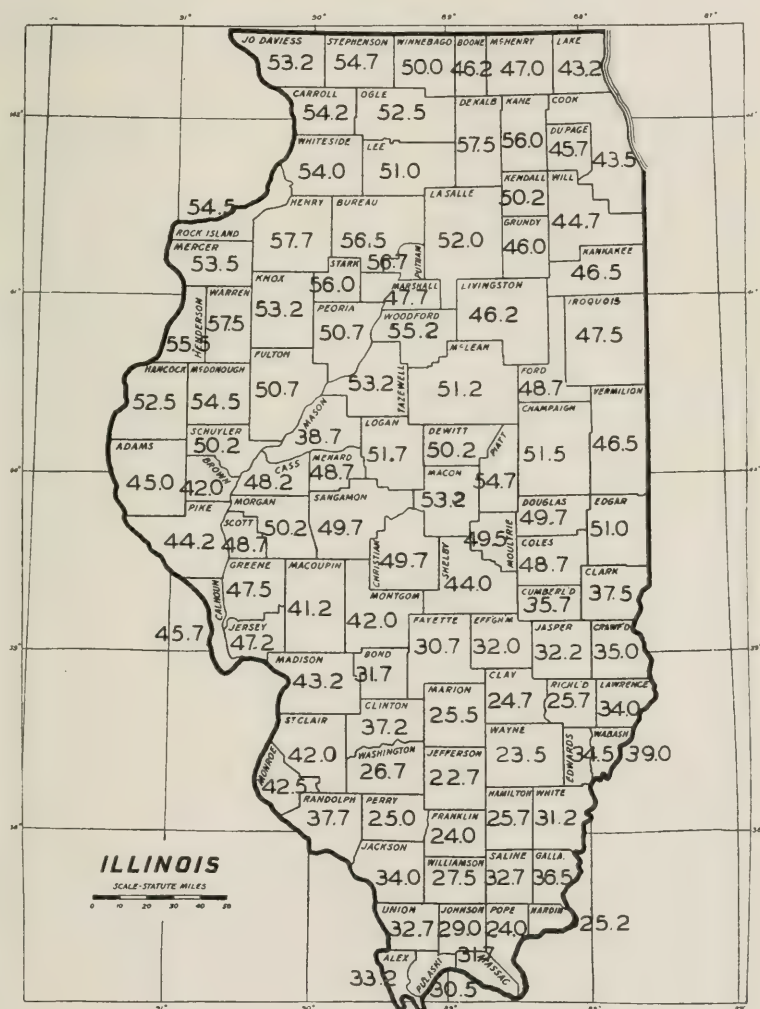


FIG. 2.—AVERAGE ESTIMATED YIELD OF CORN BY COUNTIES, 1937-1940

in 1938-1940, Wilcox and others found the average cost of growing and harvesting to be \$2.72 lower per acre for soybeans than for corn. On the record-keeping farms the average yields were corn, 59.8 bushels and soybeans, 28.7 bushels, the ratio being 2.1 bushels of corn per bushel of soybeans. It will be noted that the average difference in cost was equal to about 10 cents per bushel in favor of soybeans. With corn at 60 cents a bushel the following prices for soybeans are necessary at different yield

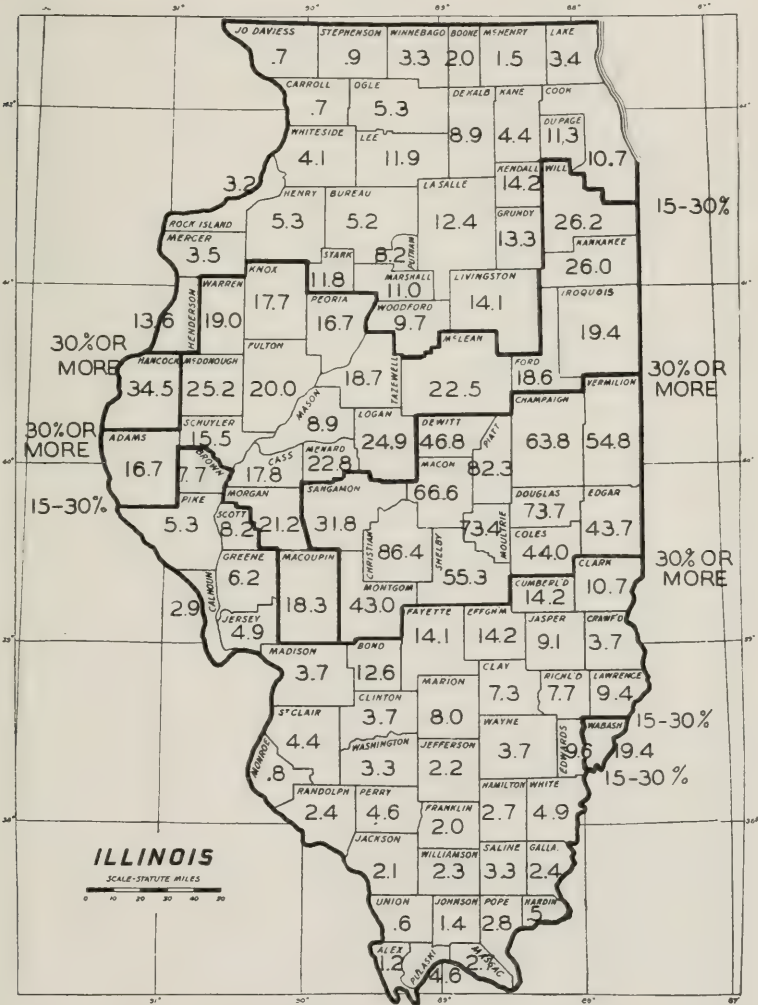


FIG. 4.—ACRES OF SOYBEANS FOR SEED PER 100 ACRES OF CORN, 1937-1940

Similar calculations can be made for any price per bushel of corn. Landlords who have higher cash costs in connection with soybeans than with corn would figure relative returns differently. Thus, for a landlord paying 10 cents per bushel for combining soybeans and a cent per bushel for shelling corn, the price of soybeans equivalent to 60 cent corn at a 2.2 corn-soybean yield ratio would be about \$1.40.

The U. S. Department of Agriculture recently announced a loan on

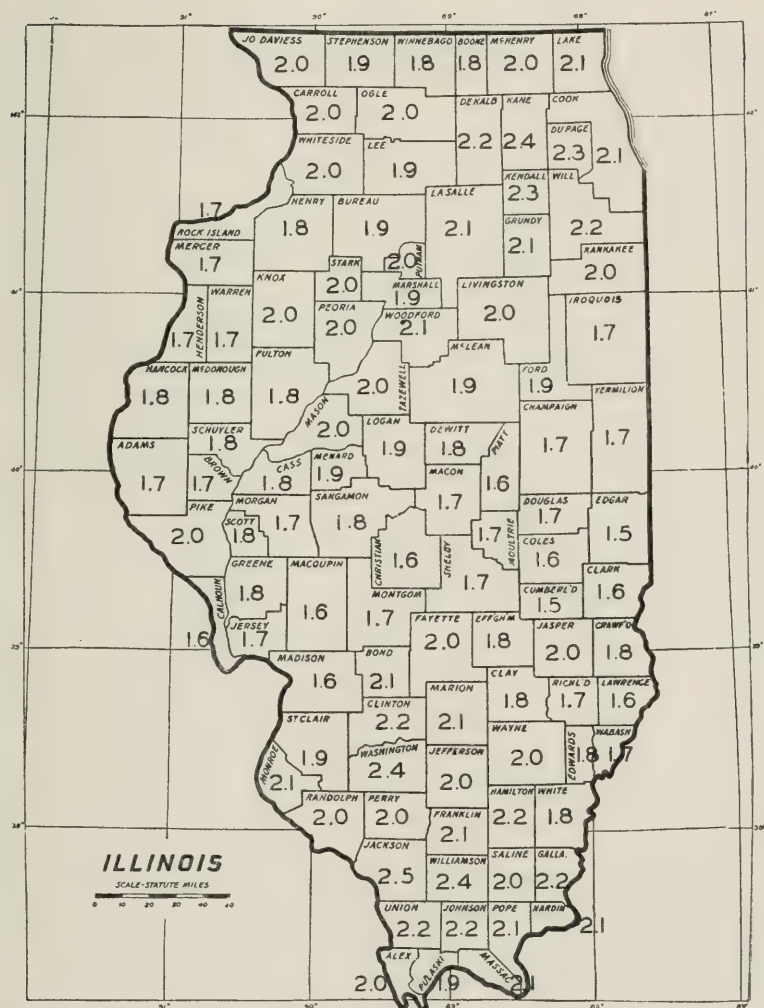


FIG. 6.—RATIO OF OAT YIELDS TO SOYBEAN YIELDS BY COUNTIES, 1937-1940

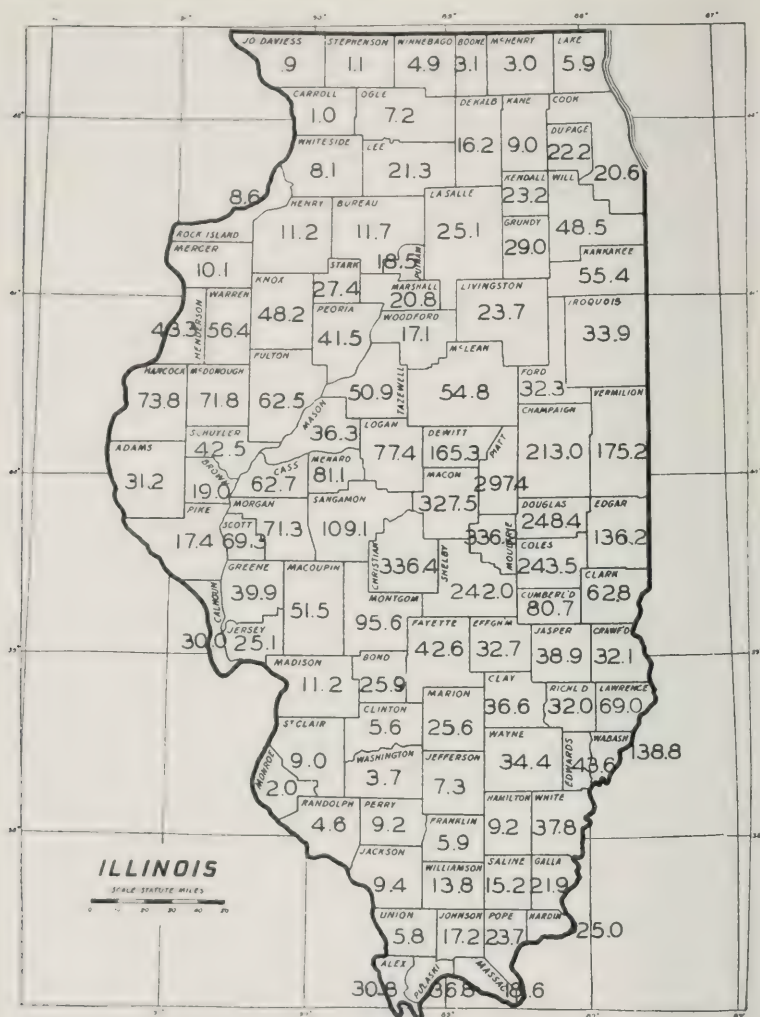


FIG. 7.—ACRES OF SOYBEANS FOR SEED PER 100 ACRES OF OATS, 1937-1940

soybeans of \$1.05 per bushel if stored on the grower's farm. This figure is about 1.4 times the Commodity Credit Corporation loan on ear corn in the Illinois areas of heavy soybean production, which is 74 cents to 75 cents per bushel for the 1941 crop of corn.

The above analysis suggests that to earn equivalent returns the price of soybeans must be about twice the price of corn. It is interesting to note that currently (December, 1941) the price of soybeans is about 2.5 times

the price of corn. This high price ratio has naturally aroused great interest in the soybean crop.

It appears that the \$1.05 loan on soybeans is based upon the "Steagall Amendment" of 1941 to the AAA Act, which provides that:

... whenever the Secretary finds it necessary to give special encouragement to the production of any commodity, such funds as are available shall be so used as to support prices for such commodities at "not less than 85 per centum of the parity or comparable prices therefor" and that "comparable prices . . . shall be determined and used (whenever) the production or consumption of such commodity has so changed . . . as to result in a price out of line with parity prices for basic commodities." That is, comparable prices are to be used where parity prices are not now available, as in the case of soybeans, or where parity as calculated according to the general formula is clearly out of line with prices of the five basic commodities—corn, cotton, wheat, rice, and tobacco—specified in the Agricultural Adjustment Act of 1938.¹

If the loan value of soybeans upon which future government action in connection with supporting the price of the soybean crop may rest has been fixed at the ratio of 1.4 to the loan value of corn, it is a matter of considerable significance to soybean growers. It would tend to support the price of soybeans at the artificially low level caused by the expansion in soybean production which in turn was caused in part by the AAA payments to hold down the acreage of corn.

Soybeans and oats. Average yields of oats by counties are shown in Figure 5 and comparative oats and soybean acre yields—expressed as bushels of oats per bushel of soybeans—in Figure 6. North of the line drawn from Alton through Mattoon oat yields averaged 30-45 bushels per acre. In the heavy soybean growing counties located in the southern portion of the cash grain area the average yield of oats has tended to be 1.6-1.7 times the average yield of soybeans. To the north and northwest of this area the oat yields are relatively better; oat yields averaging about 2.0 times soybean yields.

The acres of soybeans per 100 acres of oats are shown in Figure 7. In twelve counties eastward from Sangamon more acres of soybeans were grown on the average than of oats in 1937-1940. To the south the proportion of soybeans to oats was less and also to the north and west it diminished. It is possible that the relatively higher yields of oats in relation to soybeans outside of the area of greatest soybean concentration account for the fact that soybeans have not replaced oats to a greater extent than they have. The desire to have an adequate acreage of oats as a nurse crop in areas where wheat is not extensively grown is also a

¹From "Agriculture and the Parity Yardstick," an address by Howard R. Tolley before the National Cooperative Milk Producers Federation, Chicago, Illinois, November 11, 1941.

factor. It should be noted that over much of the area where soybean production is concentrated wheat is also grown.

L. J. NORTON and R. H. WILCOX

HOW SOYBEAN COSTS HAVE BEEN REDUCED

Nineteen years of cost records reveal an interesting story of the development of soybeans in Illinois. Indeed the reduction in the cost of production has been an important item in giving this crop its present place in our agriculture. These costs serve to measure in terms of values some of the developments which have often been discussed. The introduction and general use of improved varieties, better cultural practices, and the mechanization of agriculture, together with the change in the general price level, have made drastic changes in the cost of production.

Costs as used in this discussion include a charge for all labor, power, use of equipment, and seed just as if they had been hired or purchased by the farmer, a rental charge for land equal to the taxes paid on the land, and an interest charge of five percent of the current land value.

During this period of 19 years, the change in costs has not been entirely uniform. Space will not permit a detailed record of year-to-year changes. In general, the trend of costs has been downward, and the trend in yields upward. In the year 1931, the most drastic reduction in costs took place, and total costs in that year were under \$1.00 a bushel for the first time, and since that time they have not exceeded 80 cents a bushel. To portray the extent of change over this period, we may use results for 1922-1924, the first three years of the period, and for 1938-1940, the last three years, since each of these periods is quite representative of its time.

In the earlier period, the total cost in east-central Illinois was \$29.31 an acre, or \$1.47 per bushel. For the last three years, corresponding figures were \$15.57 an acre, or 56 cents per bushel. This represents a reduction of 47 percent on the cost per acre, and 62 percent on the cost per bushel.

How much of this reduction has resulted from one cause and how much from another is impossible to measure accurately. Yields per acre averaged 16.4 bushels in the earlier period, and 28.6 in the later period. While favorable weather in two of the last three years may account for part of the difference, the yield of combined beans for the last 10 years on the record farms was 26.9 bushels, or 10.5 bushels above that of the earlier period. Part of this increase must be ascribed to better varieties, a part to improved methods of culture, and a part to the introduction of equipment which has reduced harvesting losses.

In each period, the operating cost of growing and harvesting the crop

represented approximately one-half of the total cost. These operating costs are largely under the control of the individual farmer. The other half of the cost is due largely to external conditions over which the farmer has little or no control. During this period, the operating costs which are under the farmer's control have been reduced from an average of \$15.21 to \$7.61 per acre, or a reduction of 50 percent. These figures include charges for labor, power, machinery, seed, inoculation, and overhead. In accomplishing this reduction, the development of soybeans has coincided with a revolutionary change in agriculture because of mechanization. This change has greatly affected soybean production first, in ground preparation, seeding, and cultivation, and later, in making possible the introduction of the combine to affect harvesting costs. Thus labor and horse power have been largely supplanted by tractor power and equipment. In 1922-1924, an acre of soybeans required 13.4 hours of labor, but in 1938-1940, 4.3 hours. Similarly, horse labor was reduced from 29.1 hours per acre to .76 hour, and tractor use increased from .7 hour to 2.6 hours. The labor required per bushel of beans was four-fifths of an hour in the earlier period, and one-seventh in the later one.

This change in method has resulted not only in a reduction of labor and cost but has made possible more efficient operations, which have doubtless contributed to improved yields.

Coincident with the introduction of these better facilities has been an improvement in knowledge of how to handle the crop. To this end, both experimental results and farmers' experiences have contributed.

The other half of the cost—the half not under the farmer's control—has had a like reduction. This part includes charges for taxes and interest on investment in land. The reduction in taxes is in a large part a shifting in the form of taxes, which is of doubtful value as a gain because accounting procedure does not charge the substitute taxes against the crop. Since the land charge is based upon five percent of current land value, its reduction reflects the shrinkage in capital values as a result of the depression. Thus are some of the losses of the past decade offset by what might erroneously be listed as credits to modern efficiency.

How much profit have soybeans shown during this period? Profits involve not only the costs but the income, which in turn results from yields and prices. The farmer often thinks of profits as the difference between income and the direct out-of-pocket costs in producing the crop. Costs as discussed here include much more. On the basis of complete costs and the income based on prices at harvest time, the crop broke even or showed a profit in 3 of the 12 years, 1922-1933, and except for the low prices of the depression period, 3 other years might well have been on the profit side. Beginning with 1934, the crop has shown a profit each

year except in 1940 when the 21.5 bushel crop at 70 cents a bushel lacked 78 cents an acre of breaking even.

Some current problems of soybean production defy even the detailed procedure of cost accounting. No means has as yet been devised to evaluate accurately the removal of fertility from the soil. Are the profits from the crop rightly named, or are they in part a cashing-in on nature's store of plant nutrients? It is a well-known fact that soybeans loosen the soil and that such soil erodes easily, especially on sloping ground. These losses should also be put in the debit column, although their extent varies widely from farm to farm, depending upon topography and conservation practices used. Under the most commonly used methods of culture, many soybean fields have become foul with weeds. While the increased cost to the farm because of the weed problem cannot be measured, many farmers recognize the problem and are shifting to row-planting and cultivating as a means of weed control.

Comparisons of beans planted solid and in rows are too few as yet for reliable conclusions. A study made in east-central Illinois in 1940 gave comparisons of solid planting, rows 20 to 24 inches in width, and rows 28 to 40 inches in width. The growing and harvesting costs per acre were practically the same in the three cases. As compared with the solid planting, the rows of 20 to 24 inches gave a 12 percent greater yield, and required 16 percent more labor and 20 percent more power; the rows of 28-40 inches gave a 17 percent greater yield and required 13 percent more labor and 15 percent more power. The cost of the additional labor and power required for the row beans was about offset by lower seed costs. The cost per bushel was lowest on the row beans. Yields in all groups were only fair last year. It will be interesting to observe what will be the results this year when yields are more favorable.

With the rising price level of the present time, it is inevitable that costs will increase, although the increase in costs normally lags behind the increase in prices. It may be questioned whether or not the rise in costs will be offset by further economies in production, although it might be offset under favorable conditions by increased yields. Obviously with current prices the soybean crop of 1941 will be very profitable to Illinois farmers.

R. C. Ross

HOW THE COST-OF-LIVING INDEX IS CONSTRUCTED¹

An article, "Adjusting Wages to Changes in Cost of Living," was included in the August, 1941, issue of the *Illinois Farm Economics*. In

¹Material for this article was obtained from an article, "The Bureau of Labor Statistics' New Index of Cost of Living," *Monthly Labor Review*, U. S. Department of Labor, August, 1940.

discussing this subject with the employees of the Illinois cooperative, which is now using the cost-of-living index as a basis for adjusting wages, several questions were raised as to the composition and reliability of the index. An attempt has been made to answer these questions in the following discussion.

The present cost-of-living index (1935-1939 = 100) is based upon prices, most of which are obtained each month, of 198 goods and services. In addition rents data are collected every three months, for the types of dwellings occupied by wage earners and clerical workers. Prices in each of 34 cities are collected under the supervision of the United States Department of Labor from representative merchants and agencies supplying these goods and services. The principal items include food, clothing, fuel, electricity, ice, house furnishings, and miscellaneous items (Table 1).

Cost-of-living indexes based upon actual costs of goods purchased.

A nation-wide study was made of the actual cost of goods purchased by wage earners and lower-salaried clerical workers for one year in the period 1934 to 1936.² Results of this study were used as a basis for weighting each of the items included in the cost-of-living index for 1935-1939. The weights given to each group of items in the index are shown in Table 2.

The food-cost index. The largest food expenditure is for meats, fish, and poultry, 28.2 percent of the food budget being spent for these items (Table 3). Expenditures for fruits and vegetables rank next, being 21.6 percent of the food budget total. Nineteen and one-tenth percent of the food budget is spent for whole milk, butter, cheese, and evaporated milk. Expenditures for other items in the food budget are

TABLE 1.—NUMBER OF GOODS AND SERVICES (EXCEPT RENT) INCLUDED
IN THE INDEX OF COST OF LIVING FOR WAGE-EARNERS AND
LOWER-SALARIED WORKERS IN LARGE CITIES^a

Groups of items	Number of items used, 1939
Food.....	54
Clothing.....	48
Fuel, electricity, and ice.....	10
House furnishings.....	26
Miscellaneous.....	60
All items.....	198

^aFrom "The Bureau of Labor Statistics' New Index of Cost of Living," *Monthly Labor Review*, U. S. Department of Labor, August, 1940.

²Williams, F. M., and Zimmerman, C. C., "Studies of Family Living in the United States and Other Countries," U. S. Department of Agriculture Misc. Pub. No. 223.

TABLE 2.—COST OF GOODS PURCHASED BY WAGE-EARNER AND LOWER-SALARIED GROUPS STUDIED, 1934-1936, ESTIMATED COSTS, 1934-1939, AND COST-OF-LIVING INDEX, 1935-1939^a

Group	Cost of goods purchased		Cost-of-living index 1935-1939
	1934-1936	1934-1939	
		(estimated)	
Food	34.0	33.6	33.9
Clothing	10.3	10.4	10.5
Rent	17.5	18.0	18.1
Fuel, electricity, and ice	6.7	6.4	6.4
House furnishings	4.0	4.2	4.2
Miscellaneous	26.8	26.7	26.9
Other savings .....	.7	.7	....
Total	100.0	100.0	100.0

^aFrom "The Bureau of Labor Statistics' New Index of Cost of Living," *Monthly Labor Review*, U. S. Department of Labor, August, 1940.

cereals, 15.6 percent; eggs, 5.5 percent; coffee and tea, 3.4 percent; sugar, 3.4 percent; and fats and oils (other than butter), 3.2 percent.

The rent index. Samples of dwellings are selected by the Department of Labor so as to give representation to each rental range and type of dwelling proportional to that obtaining in the entire city. The number of dwellings for which rents are secured varies according to size of city from 450 in Manchester to 2,750 in New York City. Rent is the second largest item in the cost-of-living index averaging 18.1 percent of the total.

The clothing-cost index. Forty-eight items are included in the clothing index ranging all the way from shoes and hats to overcoats and underwear. Together these items make up 10.5 percent of the cost-of-

TABLE 3.—PRINCIPAL GROUPS OF FOOD COSTS INCLUDED IN THE COST-OF-LIVING INDEX, 1935-1939^a

Group	Number of items	Percent of total food costs
Meats, fish, and poultry	13	28.2
Fruit and vegetables	18	21.6
Dairy products	4	19.1
Cereals and bakery products	9	15.6
Eggs	1	5.5
Coffee and tea	2	3.4
Sugar	1	3.4
Fats and oils (other than butter)	5	3.2
Total	53 ^b	100.0

^aFrom "The Bureau of Labor Statistics' New Index of Cost of Living," *Monthly Labor Review*, U. S. Department of Labor, August, 1940.

^bShows one item less than listed in Table 1.

TABLE 4.—RELATIVE IMPORTANCE OF VARIOUS GROUPS OF ITEMS INCLUDED IN THE INDEX OF MISCELLANEOUS COSTS, 1935-1939^a

Item	Number of items	Percent of total costs
Transportation.....	10	29.5
Recreation.....	6	18.7
Medical care.....	21	14.1
Household operation.....	12	13.5
Personal care.....	11	8.6
Gifts, contributions, and other unallocated items.....	..	15.6
Total.....	60	100.0

^aFrom "The Bureau of Labor Statistics' New Index of Cost of Living," *Monthly Labor Review*, U. S. Department of Labor, August, 1940.

living index. Changes in fashion, centrally heated dwellings, and protection from weather provided by automobile travel, have resulted in less clothing being worn than formerly. Lower manufacturing costs and increased use of low-cost substitutes such as rayon also have helped to lower clothing costs. In 1917-1919, 15.5 percent of the actual disbursements of families were for clothing, or nearly 50 percent more than the proportion spent in recent years.

Miscellaneous-cost index. Transportation, recreation, medical care, and household operations are the principal items included under miscellaneous costs in the cost-of-living index (Table 4). Altogether 60 items are included under this classification, which together make up 26.9 percent of the total cost-of-living index.

Fuel, electricity, and ice accounted for 6.4 percent of total living costs and house furnishings 4.2 percent.

R. W. BARTLETT

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, adjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period...	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	110	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	84	68	75
1932	65	48	41	69	43	43	62	66	47	58
1933	66	51	45	71	49	51	72	62	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	78	74	87
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Corn, bu.	\$.81	\$.43	\$.56	\$.58	\$.69	\$.71	\$.61
Oats, bu.	.42	.28	.32	.28	.32	.40	.39
Wheat, bu.	1.30	.67	.81	.75	.97	.96	1.01
Barley, bu.	.66	.41	.46	.48	.52	.52	.65
Soybeans, bu.	1.94	.74	.82	.65	1.33	1.61	1.45
Hogs, cwt.	9.97	6.56	5.54	6.00	10.80	11.10	10.30
Beef cattle, cwt.	8.57	8.18	8.84	9.60	10.20	9.36	10.40
Lamba, cwt.	12.22	8.18	8.52	8.00	9.90	9.84	9.80
Milk cows, head	78.00	63.00	65.00	65.00	82.00	75.70	86.00
Veal calves, cwt.	11.27	9.15	9.63	9.70	11.10	11.26	12.10
Sheep, cwt.	6.52	3.44	3.44	3.45	4.30	5.25	4.50
Butterfat, lb.	.42	.23	.27	.27	.34	.37	.34
Milk, cwt. ...	2.32	1.59	1.67	1.75	2.05	2.37	2.40
Eggs, doz.	.30	.19	.17	.20	.23	.30	.27
Chicken, lb.	.21	.13	.13	.13	.16	.16	.15
Wood, lb.	.36	.25	.30	.31	.37	.36	.38
Apples, bu.	1.59	1.07	1.14	.90	.75	.85	.90
Pears, ton	13.88	6.05	6.68	6.70	7.70	7.94	9.20
Potatoes, bu.	1.39	.80	.83	.70	.80	.64	.80

¹² For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

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G. L. Jordan, Editor

December, 1941

Number 79

THE PRICE SITUATION

Wholesale prices continued to rise rapidly until about the middle of September, but from that time until the middle of December, there was little change. Weekly price movements, as indicated by both the all commodity index and the 28 basic commodity index of the Bureau of Labor Statistics, are shown in Figure 1. The all commodity index, however, has been converted from the original 1926 base to an August 1939 base in order to make it directly comparable with the index of prices of basic commodities.

Although the rise of the wholesale commodity price index has been checked for a period of nearly three months, it does not seem likely that the price level has been permanently stabilized. Certainly the danger of inflation is not past. Now that the United States is an active belligerent in the war, it is likely that there will be a speeding up of defense expenditures, and to prevent serious inflation it will be necessary also to speed up those measures which tend to counteract the inflationary effect of huge government expenditures.

The recent price stability suggests that price control measures are becoming more generally effective instead of being limited to a few commodities. It appears that administrative officials in Washington are now in pretty general agreement that strenuous governmental control will need to be exercised if a serious inflation is to be prevented. However, there still seems to be great reluctance on the part of Congress to vote taxes which are sufficiently heavy, or to give adequate power to the administrative officers to provide for "enforced savings" which will be large enough to prevent inflation. The future course of prices will depend in large measure on the outcome of bills now pending in Congress, or others which may be introduced to take their place. The prevention of serious inflation will necessitate drastic further increase in tax burdens, or drastic price control measures which in one way or another will result in a very large volume of purchasing power being turned over to the government by individuals. It will also require that there be no further general rapid increase in wage rates such as has occurred in many industries.

Figures 2 and 3 show the course of index numbers of wholesale prices

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

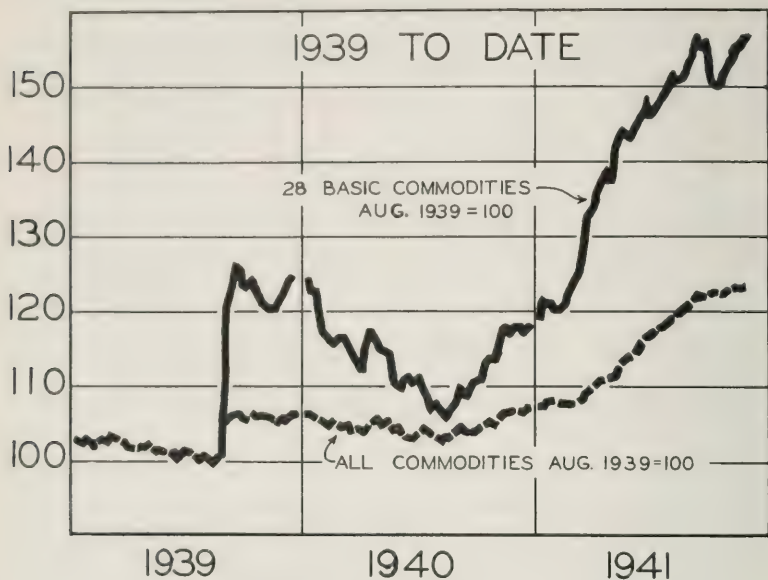


FIG. 1.—WHOLESALE PRICES, WEEKLY, 1939 TO DATE

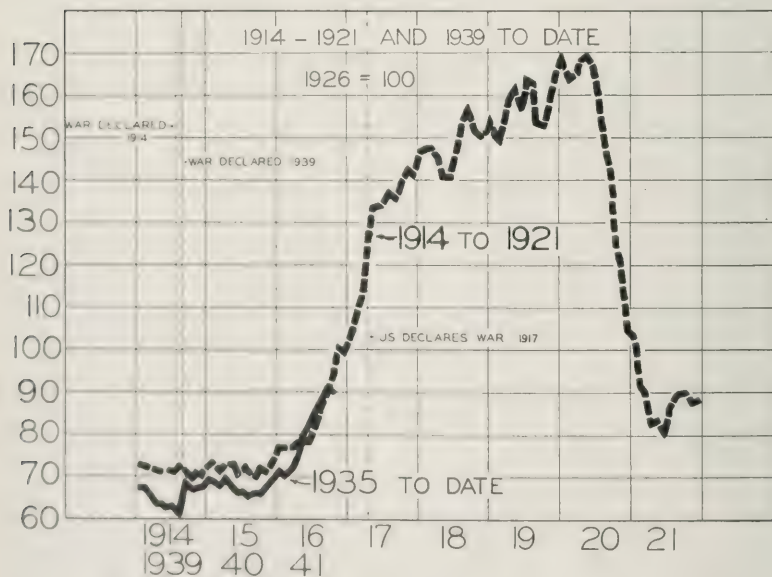


FIG. 2.—WHOLESALE PRICES OF FARM PRODUCTS BY MONTHS, 1914-1921, AND 1939 TO DATE (1926 = 100)

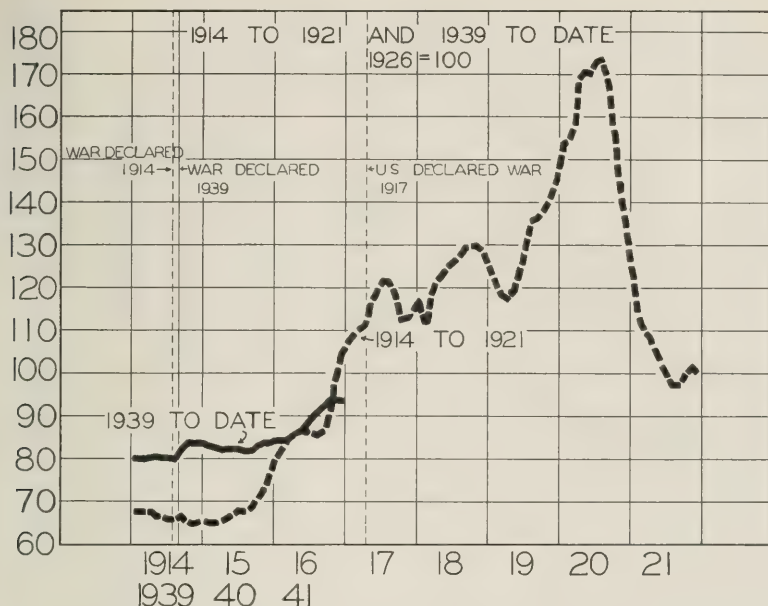


FIG. 3.—WHOLESALE PRICES OF COMMODITIES OTHER THAN FARM PRODUCTS AND FOODS, BY MONTHS, 1914-1921, AND 1939 TO DATE (1926 = 100)

of farm products and all commodities other than farm products and foods, monthly, during World War I and during the present war. The marked parallel between the increase of farm product prices in the two war periods continued to September; but in October there was a slight decline in farm product prices, one somewhat similar to that which occurred during November and December of 1916 when farm product prices were, however, about ten points higher than they are now. After the December 1916 decline, the advance in prices of farm products was resumed at a very rapid rate. It is not likely that such a rapid advance will occur in the next few months, unless the administration fails to get through Congress the most essential parts of fiscal and price control legislation that is now pending.

One of the notable features of the present price situation is that the index of wholesale prices of farm products, and the index of wholesale prices of all commodities other than farm products and foods, have been about equally high (relative to their 1926 levels) in the past few months. However, commodities other than farm products and foods have been a little bit higher, and the downturn of the farm products index for October

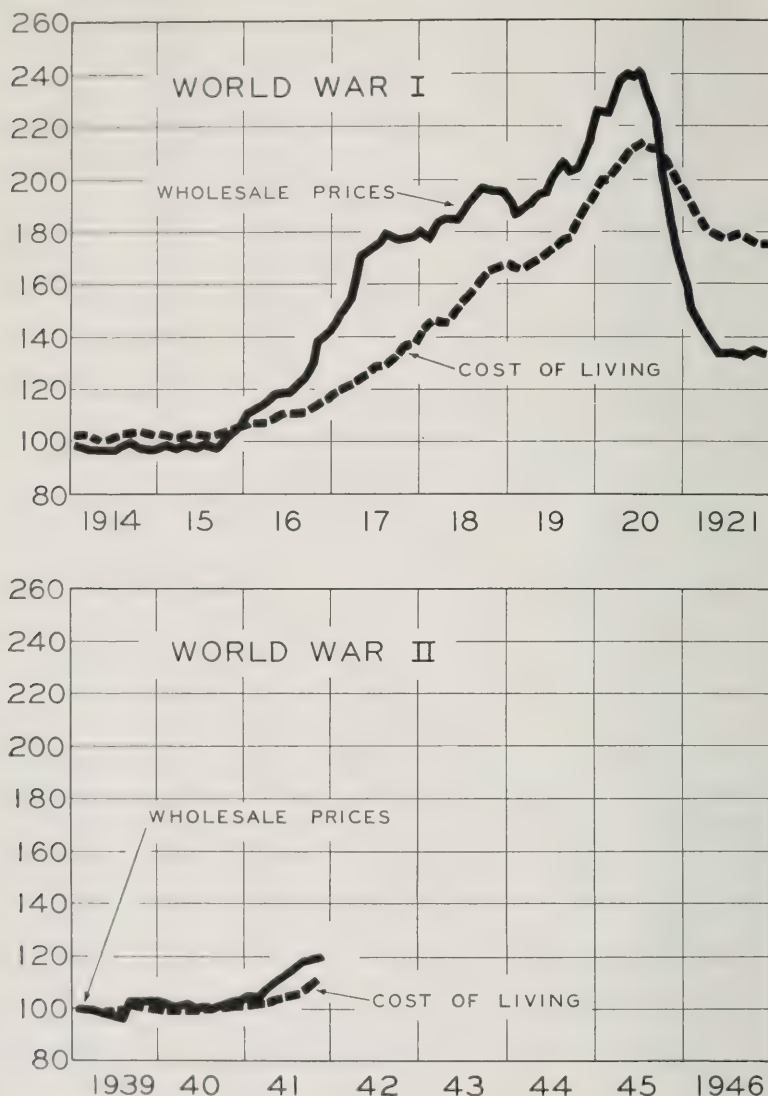


FIG. 4.—WHOLESALE PRICES AND THE COST OF LIVING IN THE UNITED STATES, WORLD WAR I AND WORLD WAR II

while the index of prices of other commodities continued to rise, increased the disparity somewhat.

The cost of living has not risen as rapidly as wholesale commodity prices. Partly because of this, the power of farm products to purchase

goods needed by farmers has increased rapidly in recent months. The ratio of prices received by farmers to prices paid by farmers has risen from 81 last October to 102 for October of this year. This ratio is based on a comparison of prices of goods sold and goods purchased in the five year period preceding World War I. For three months, August, September, and October, the index stood at or above 100.

Figure 4 compares the monthly index of wholesale prices and the cost of living during the period 1914 to 1921, and from January 1939, to date. The course of the index of cost of living is very similar to that of prices paid by farmers, but inasmuch as the index paid by farmers is available only quarterly rather than monthly during the period of World War I, the comparison here given is that of wholesale prices and the cost of living. Because movements of the cost of living lag behind changes in wholesale prices, a considerable increase in cost of living is to be expected in the next few months even if there should be no further increase in wholesale prices.

As has been pointed out in previous issues of "Illinois Farm Economics," the fundamental cause of inflation in wartime has been the spending by governments of large amounts of purchasing power without taking a correspondingly large amount of purchasing power from individuals—either by taxation or by borrowing from lenders other than banks. This may be accomplished either through the issuance of new currency or by the expansion of borrowing from commercial banks. The fundamental problem of preventing inflation is a problem of properly financing the defense expenditures of the federal government.

Total federal expenditures have been mounting rapidly in recent months. In September, just two years after the beginning of World War II, they were nearly as great as the peak of expenditures just after the close of World War I. In October, federal expenditures amounted to 2,089 million dollars, which was above the World War I peak of 2,061 million. Furthermore, the purchasing power of each dollar is now much greater than it was at the end of 1918. The increase in expenditures since the beginning of the present war, however, has not as yet been as great as the increase which occurred during World War I. At the beginning of that war, the expenditures of our federal government were averaging only a little over 50 million dollars a month, whereas at the outset of the present war they were running at about 750 million a month.

Defense plans call for a rapid further increase in federal expenditures during the coming months, and there is every indication that within the next six months, the increase in the rate of spending since the beginning of the war will have been as great as the increase in rate of

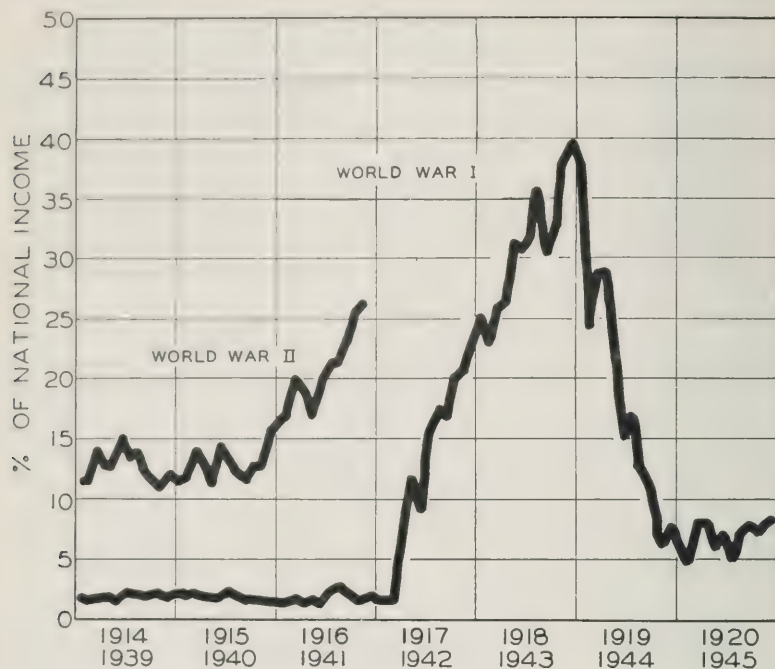


FIG. 5.—EXPENDITURES OF THE FEDERAL GOVERNMENT,
WORLD WAR I AND WORLD WAR II

spending during the entire World War I period. Here again it is to be borne in mind that this increase will be measured in terms of dollars, which will probably at that time (six months from now) have a much greater purchasing power than the dollar had at the end of 1918.

The difficulty of financing such government expenditures in a non-inflationary way is great. From this standpoint, it is helpful to compare federal expenditures with the national income. This is done in Figure 5 where the monthly expenditures of the federal government are expressed as a percentage of the monthly national income. It will be seen that the peak of expenditures reached in December 1918 was approximately 40 percent of the estimated national income for that month. In September 1941, federal expenditures amounted to slightly over 23 percent of the total income of people in the United States.

But why, in the former war period, did inflation begin long before the rapid rise in federal expenditures, whereas during the current war the rise of prices has been substantially coincidental with the rising expenditures?

The primary reason for inflation getting under way before the rapid increase of government expenditures during the first World War was that very heavy purchases of foodstuffs and war supplies were made during 1915 and 1916 by foreign governments. These expenditures of foreign governments, of course, were in no part financed by taxation in this country, and only a small amount of the income of individuals in this country was devoted to the purchase of bonds of foreign governments or of other securities which were sold here. The purchases were largely financed, either directly or indirectly, through commercial bank loans, and, consequently, had the same effect as correspondingly financed purchases by our own government. In consequence, almost the entire effect of the increased purchases which were made from the beginning of the World War through 1916 was of an inflationary nature.

As was pointed out in the June issue of "*Illinois Farm Economics*" (page 44), there was a less rapid rise of wholesale prices in the United States soon after the United States entered the World War than occurred prior to that time. This was the result of two basic factors: (1) The expenditures for arms and ammunition were then primarily on a basis which would have to be paid for by the people of the United States and (2) price control measures of the Food Administration and the War Industries Board were initiated soon after we entered the war.

It is very unlikely that the course of wholesale prices during the next two years will follow the course of prices of 1917 and 1918 as closely as has been the case in the past two years. Various price control measures had already been taken prior to our entry into the war, and there seems to be reason to expect that further control measures will be instituted now that we are actively engaged as a belligerent. We shall probably have a less rapid rise in prices during the early months of 1942 than occurred in the early months of 1917. It seems rather unlikely, however, that measures of taxation and of paying for bonds out of the income of purchasers will be sufficiently effective to prevent a considerable further rise of prices. Possibly the rise in future months will be similar to that which occurred in the latter part of 1917 and in 1918. The extent of the rise will of course depend upon the effectiveness of methods of control, and upon the magnitude of defense expenditures, as well as upon the length of the war.

The second revision of the federal budget placed the total for the 1941-42 fiscal year at 24.5 billion dollars. This would be an average of over 2 billion dollars monthly. Inasmuch as the rate of expenditures at the beginning of the year was only about 1½ billion monthly, and the current rate is about 2 billion monthly, the budget will call for a rate of

spending of about $2\frac{1}{2}$ billion monthly by late spring or early summer. Such a level will constitute about 30 percent of the national income. Furthermore, the second revision of the budget was prepared before the attack at Pearl Harbor, and a more rapid rate of expenditures is now in prospect. It would not be at all surprising if federal government expenditures should amount to about 35 percent of the national income by July, 1942, and about 45 percent of the national income by January, 1943.

No such scale of federal expenditures can possibly be maintained without rather drastic curtailment of goods for civilian use. Inasmuch as we do not have the man power or the raw materials to expand total production much further than we have already done, increases in goods and services for war purposes from now on must come primarily through restriction of supplies available for civilian use. Thus far, the people of the United States have felt little lack of supplies in the markets, and they have given up only a relatively small amount of their incomes to the government in the form of taxes and payment for bonds. Within the next year, the situation will be greatly different.

Suppose expenditures by the government increase to 50 percent of the national income. That level, if continued over any considerable time, would mean that, on the average and in one way or another, people in the United States would have to give up one-half of their income in the form of taxes and bond payments. At present price levels, capacity production will probably involve a national income of but a little over 100 billion dollars yearly; and if only 50 percent of this remains for civilian use, it will mean that the civilian population will be limited to supplies of goods perhaps even less than they had in the depression years of 1932 and 1933.

Of course, many things will probably be available in larger supply than they were in the depth of depression, but of some other things, especially metal products, we will presumably have to get along with less than in 1932 and 1933. Furthermore, the effect will be very different as between different individuals. In 1932 and 1933, those who suffered most were people who were out of work. Although there will be a considerable amount of "defense unemployment" because of lack of raw materials for certain industries, it is not likely that many people will remain unemployed long during the war effort. Those whose incomes will be at the greatest disadvantage, as compared with 1932 and 1933, will be the people who have relatively fixed incomes—salaries, annuities, and so forth—for they will be called upon to pay heavier taxes and to buy bonds in large amount without having their incomes increased.

If steps are not taken to reduce spendable consumer income as rapidly as the supplies for civilian use fall off, price rises are the natural result, and in the absence of price fixing, the goods that are available will be distributed on the basis of ability and willingness to pay higher prices. If under these circumstances prices are fixed, some system of rationing would have to be adopted to determine which prospective buyers are to obtain the goods they wish.

By proper methods of financing federal expenditures, both inflationary price rises and the waste and annoyances of a general system of rationing can be avoided. To do this it will not mean that civilians as a whole will have any smaller real income of goods and services than if inflation is permitted. It will only necessitate that the government finance its expenditures by taking people's income *before* rather than shortly after the expenditures are made.

Although it will make no real difference in the total amount of goods which all civilians are able to have, the methods of federal finance will have a vital effect upon the distribution of incomes as between individuals. If the cost of living rises greatly, people with fixed money incomes will have their real incomes (incomes in terms of the goods which they can be exchanged for) drastically reduced. Thus inflation will impose an additional financial burden on them. On the other hand, inflation will tend to increase some people's money incomes even more rapidly than prices rise, and they will be somewhat benefited by it.

In the long run, however, the nation as a whole and most individuals are likely to be worse off if inflation is permitted. There is an immediate loss to the nation because inflation will necessitate burdens of meeting price maladjustments which might otherwise be avoided. In the long run, everyone is likely to lose by it, because inflation will increase the difficulties of post-war readjustments and will deepen and prolong a post-war depression.

E. J. WORKING

THE SEASONAL DISTRIBUTION OF HOG MARKETINGS AND ITS INFLUENCE UPON FARM EARNINGS ON ILLINOIS ACCOUNT-KEEPING FARMS IN 1940

The seasonality of hog marketings and of the consequent market prices has long been cited by extension workers in their advice to farmers. This year, a study was made of the seasonal distribution of hog marketings from Illinois account-keeping farms, using data obtained on 1,914 of the 2,738 farm financial records kept by cooperating farmers throughout the state.

TABLE 1.—PERCENTAGE DISTRIBUTION BY MONTHS
OF MARKETINGS OF ILLINOIS HOGS

Month	767 southern Illinois account- keeping farms 1940	1,147 northern Illinois account- keeping farms 1940	All Illinois hogs ^a		
			1940	1930-1940 ^b	1920-1929
January..	6.1	8.0	10.2	11.6	12.8
February..	6.8	8.0	8.2	8.4	9.8
March.....	10.4	9.0	7.4	7.6	8.0
April.....	11.4	9.8	8.0	8.1	7.1
May.....	9.6	8.1	8.5	8.4	8.0
June.....	7.3	6.9	8.4	8.0	8.6
July.....	4.7	5.5	7.2	6.7	7.2
August.....	7.2	6.4	6.8	6.6	6.4
September..	12.1	7.5	6.3	6.5	5.9
October.....	11.2	10.2	8.4	8.0	6.9
November..	8.4	9.9	9.8	9.4	8.6
December..	4.9	10.6	10.8	10.8	10.8

^aCalculated from data supplied by the Illinois Crop Reporting Service.^b1933 was omitted because of AAA hog purchases.

To minimize climatic influences upon the time of farrowing, the state was divided into a north and south half, a division which coincides fairly well with the Chicago and East St. Louis hog market areas. The north boundaries of crop reporting districts 4a and 6a were used to make this division in order to facilitate the use of Illinois Crop Reporting Service data. Of the 1,914 farms used in this study, 767 were located in the southern part of the state, and 1,147 in the northern part.

Normally the seasonal peaks in hog prices occur in March and September, and these seasonal peaks in prices are largely the result of small hog receipts during those months. March had the lowest hog receipts of the first six months of the year, and September was the lowest month of the entire year for the average of the 10-year period 1930-1940, as well as for the year 1940 (Table 1). However, price-making influences other than the supply of hogs reaching the market from Illinois caused March, next to June, to be the month of lowest hog prices in 1940.

Quite contrary to the marketing pattern established by all Illinois hog producers, and in spite of abnormal seasonal price movements in 1940, the Illinois account-keeping farmers marketed most of their hogs in those months when the fewest hogs were reaching the market. Southern Illinois account-keeping farmers marketed 21.8 percent of all their hogs sold in 1940 during the months of March and April, and 30.5 percent during the months of August, September, and October (Table 1). They marketed only 4.9 percent of their hogs in December, normally the month of lowest hog prices and, in 1940, the month of largest receipts.

The northern Illinois account-keeping farmers found it more difficult to farrow their pigs as early and to get them to market as early as did the

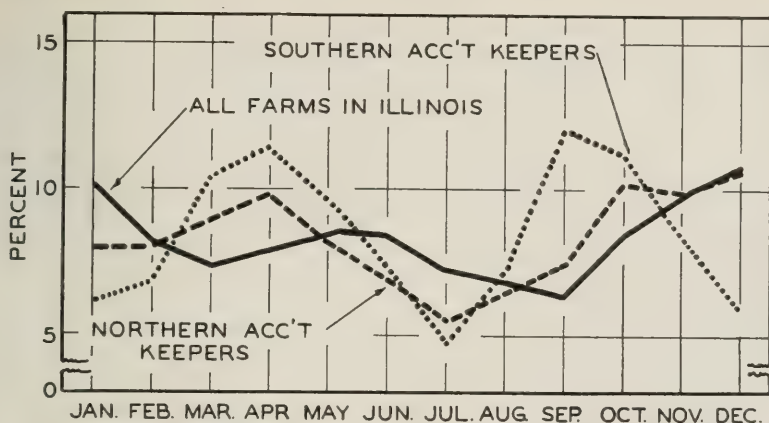


FIG. 1.—PERCENTAGE DISTRIBUTION BY MONTHS OF TOTAL NUMBER OF HOGS MARKETING IN ILLINOIS, AND HOGS MARKETING FROM NORTHERN AND SOUTHERN ILLINOIS ACCOUNT-KEEPING FARMS IN 1940

southern Illinois farmers. Their heaviest marketings came in December, but they succeeded in marketing more hogs than the average of all farms during September and October by 3.0 percent of the year's marketings.

A comparison of the marketing distribution on the account-keeping farms with the pattern established by all hog producers in the state reveals the extent to which the account-keeping farmers have adopted better breeding, feeding, and sanitation programs to secure the advantage of normal seasonal peaks in hog prices (Figure 1, Table 1). The performance of the more favored southern Illinois account keepers has been particularly outstanding. They marketed the fewest hogs in December and January when other farmers were marketing the most hogs; and conversely, they sold most of their hogs in those months when other farmers were sending the fewest hogs to market.

The adoption of swine production practices leading toward a more profitable marketing program by the more progressive farmers has influenced the character of the seasonal distribution of all hog marketings from Illinois. The length of the feeding period has been shortened through feeding balanced rations and keeping pigs healthy under sanitary conditions. Better care at farrowing time has permitted earlier spring litters. There has been a change in the seasonal distribution of hog marketings from the average of the 10-year period 1920-1929 to the average of the 10-year period 1930-1940 (1933 omitted), a change in which our account-keeping farmers made the most progress.

The proportion of Illinois hogs sent to market in January and Febru-

TABLE 2.—TIMELINESS OF HOG MARKETING AND FARM EARNINGS
ON 274 SOUTHERN ILLINOIS FARMS, 1940

Item	Percent of all butcher hogs marketed in February, March, April, August, September, and October			
	0-25%	25.1-50%	50.1-75%	75.1-100%
Number of farms	32	60	84	98
Size of farm, acres	349	337	310	255
Total investment per farm	\$44 570	\$41 491	\$35 731	\$28 097
Earnings				
Net farm earnings	\$ 3 140	\$ 3 058	\$ 2 826	\$ 2 332
Rate earned on the investment	7.0%	7.4%	7.9%	8.3%
Net earnings per acre	\$ 9.00	\$ 9.08	\$ 9.11	\$ 9.15
Swine efficiency factors				
Returns per litter farrowed	\$ 79	\$ 71	\$ 81	\$ 90
Pigs weaned per litter	6.3	5.7	6.4	6.9
Hog returns per dollar invested in hogs	\$ 2.10	\$ 2.18	\$ 2.18	\$ 2.47
Returns per \$100 feed fed productive livestock	\$ 137	\$ 139	\$ 142	\$ 146
Average price received for hogs sold	\$ 5.33	\$ 5.49	\$ 5.37	\$ 5.60
Percent of gross income from hogs	26.9%	28.8%	26.7%	35.4%
Percent of gross income from cattle	29.7%	35.0%	22.8%	20.0%
Number of butcher hogs sold per farm	155	160	141	146
Average weight per hog	243	235	231	229

ary has declined from 22.6 percent in 1920-1929, to 20 percent in 1930-1940 (Table 1). At the same time, the proportion marketed in September, October, and November increased from 21.4 percent to 23.9 percent. Fewer spring and summer pigs are being held over the first of the year to be fed out on new corn.

That farmers found timely marketing a profitable practice was shown by an analysis of the farm financial records. This analysis was limited to farms having a gross return of at least \$1,000 from hogs, or a gross return from hogs less than \$1,000 but equal to 40 percent or more of the total income from the farm. However, in crop reporting districts 7 and 9 in southern Illinois, the requirement was reduced to \$500 or more, or 40 percent of the total gross income. By this procedure, the analysis was limited to those farms on which the swine enterprise was large enough to materially affect the total farm earnings. Two hundred seventy-four of the 767 southern Illinois farms, and 486 of the 1,147 northern Illinois farms met these qualifications and were used in this study. A separate analysis was made on the records in the two parts of the state, and the records were sorted into four quartiles based on the percent of the total number of butcher hogs sold in 1940 that were marketed in the six months of normally seasonally higher prices, February, March, April, August, September, and October.

In southern Illinois, the 98 farms that marketed from 75 to 100

percent of their butcher hogs in these six months had the highest returns from hogs and the highest rate earned on the total farm investment (Table 2). The rate earned declined from 8.3 percent for this group, to 7.0 percent for the group marketing 25 percent or less of their butcher hogs during the six basic months. The 98 farms with the most timely marketing also had the highest hog returns per litter farrowed, the largest number of pigs weaned per litter, the highest returns per \$100 feed fed to all productive livestock, and the highest net earnings per acre.

To fully appreciate the significance of the higher average earnings on these 98 farms, we must consider several other facts. Thirty-five percent of the gross income on these farms came from hogs, and 20 percent came from cattle. Only 26.9 percent of the gross income on the 32 poorest farms came from hogs, while 29.7 percent came from cattle. Thus, in a year when cattle farms in general were enjoying favorable prices, and hog farms were laboring under a hog-corn ratio of 9.2, we have a group of predominantly hog farms exceeding in earnings a group of farms with a larger proportion of cattle.

However, the higher earnings on the 98 farms cannot be attributed entirely to a price advantage secured through timely marketing. In fact the high group enjoyed only a 27-cent price advantage over the 32 farms in the low group. The average prices were \$5.60 and \$5.33 respectively. Each group of farms averaged well over 33,000 pounds of pork sold per farm, but the farms with the early marketings sold their hogs at lighter weights than did the others. It is only logical to assume that the foresight and planning exhibited by the operators in following a timely marketing program will also manifest itself in increased earnings and efficiency in other parts of the farm business. The larger number of pigs weaned on the farms with the better marketing programs is evidence for this conclusion.

It must be remembered, however, that hog price movements in 1940 were so far from the normal seasonal pattern that there was little advantage to be gained from timely marketing (Figure 2). March normally has the highest hog price of any of the spring months but had the lowest prices in 1940, and December, normally a low-price month, had higher hog prices in 1940 than any of the first six months of the year. The average price received for hogs by Illinois farmers was \$6.40 in September, 1940, as compared to \$5.80 in December. In the 10-year period 1928-1937, September prices averaged \$1.84 higher than those of December. The normal difference in earnings should, therefore, be even more definitely in favor of those farms with a good marketing program than indicated by the 1940 study.

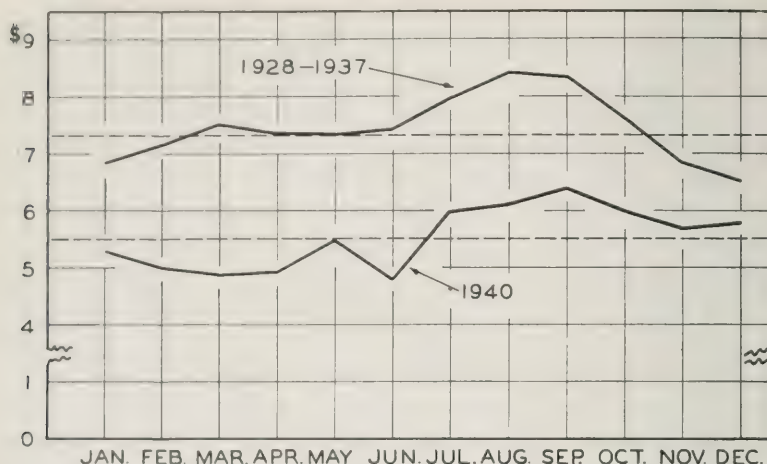


FIG. 2.—FIFTEENTH OF THE MONTH PRICES RECEIVED BY ILLINOIS FARMERS FOR HOGS IN 1940 AND AN AVERAGE OF THE TEN-YEAR PERIOD, 1928-1937¹

A similar analysis was made on the northern Illinois farms. However, the results were less conclusive than for the southern Illinois records. This was true not because timely marketing had less influence upon hog returns and farm earnings in northern Illinois, but because the presence of a number of complicating factors obscured the true effect of marketing differences. Chief among the reasons for a lack of conclusive results are the following: (1) abnormal seasonal hog price movements, (2) larger cattle enterprises on northern Illinois farms, (3) failure to adjust earnings in the analysis for disproportionate opening and closing inventory values, and (4) effects of a one-litter system in a surplus corn-producing area.

The first two of these reasons have already been discussed. The much higher ending inventory values for hogs in northern Illinois is a factor which was not present in the southern Illinois records. The northern Illinois farm account books were closed after the farm price of hogs had

¹Taken from "Planning the Farm Business," College of Agriculture, University of Illinois. Compiled from "Illinois Crop and Livestock Statistics."

AVERAGE FIFTEENTH OF THE MONTH PRICES RECEIVED BY ILLINOIS FARMERS FOR HOGS IN THE TEN YEARS, 1928-1937

Month	Average Price	Month	Average Price
January	\$6.84	July	\$7.97
February	7.15	August	8.42
March	7.51	September	8.36
April	7.38	October	7.61
May	7.35	November	6.84
June	7.42	December	6.52
Yearly Average			\$7.31

advanced to a higher level than had prevailed at any time during 1940. The average price paid for hogs on the first market day of January, 1941, at Chicago was \$6.90, and the top was \$7.15. This had the effect of giving a high return to those farms that held over the largest proportion of their spring and summer pigs—an effect that completely obscured variations in earnings due to differences in returns from hogs actually sold.

These particular farms were also those with a high proportion of spring and summer litters. These men avoided the difficulties and hazards of February and March litters, but they also made it impossible for themselves to market their hogs at times of normally highest prices. The one-litter system is common on such farms as indicated by the proportion of total market receipts that are packing sows.

The difference between the two parts of the state in respect to the number of sows marketed was shown by the records of the account-keeping farmers as well as by central market statistics. For the 4-year period 1937-1940, from 13 to 14 percent of the total hog receipts on the Chicago market have been packing sows. At the East St. Louis National Stock Yards, this figure varied from 4 to 8 percent of the total hog receipts. Since the same difference was indicated by the farm records for 1940 (12.5 percent in northern Illinois, and 8.4 percent in southern Illinois), it is evident that the southern Illinois farmers raise more litters and, hence, more pigs per sow. This means that they bred more aged sows and got more than one litter per sow each year.

The seasonal distribution of these packing sow receipts reflects very closely the time of farrowing. The proportion of total receipts at Chicago that are packing sows reaches a peak of 35 to 40 percent in August with the two preceding and the two following months all over 10 percent. Such a distribution clearly indicates a large proportion of one-litter systems. In contrast, the distribution of packing sow receipts at East St. Louis maintains almost a constant ratio to total hog receipts. It must be remembered that these data represent the ratio of packing sow receipts to total packer and shipper purchases, rather than a percentage distribution of packing sow receipts.

Conclusions

1. Illinois account-keeping farmers marketed more of their hogs at times of normally seasonally higher prices than did the average of all Illinois farmers.

2. Southern Illinois account-keeping farmers marketed a higher proportion of their hogs at these times than did the northern Illinois account

keepers. The main reason for the difference is probably the climatic advantage of southern Illinois.

3. The trend toward earlier marketing is shown in the average monthly distribution of marketings of all Illinois hogs for two 10-year periods, 1920-1929 and 1930-1940. Illinois farmers as an average increased the proportion of their hogs marketed in September, October, and November, and carried fewer hogs over the close of the year to be sold in January and February.

4. The southern Illinois account-keeping farmers found timely marketing a profitable practice. Those farms marketing most of their hogs at times of normally high prices had higher returns from the hog enterprise and higher net farm earnings than did the farms marketing a smaller proportion of their hogs at those times.

5. The price advantage gained by timely marketing in 1940 was not great enough to account for the total differences in earnings, indicating that efficiency in marketing was accompanied by efficiency in other phases of the farm business as well.

6. Packing sows constituted a larger proportion of the hogs marketed from northern Illinois than from southern Illinois, thus indicating a more widespread use of the one-litter system accompanied by later spring farrowing in northern Illinois. The concentration of packing sow receipts during July, August, and September at Chicago is further evidence for these conclusions.

7. Higher closing inventory values combined with abnormal seasonal price movements in 1940 obscured the effects of timely marketing on farm earnings on the northern Illinois account-keeping farms.

F. J. REISS and P. E. JOHNSTON

USE OF A BONUS SYSTEM FOR LOWERING COSTS OF HAULING CREAM

During the past year the Farmers' Creamery Company of Bloomington, Illinois gave funds to the University of Illinois to investigate methods which could be used to lower costs of hauling cream from the farm to the creamery. As a result of this investigation a study has been made of the methods used by the Nemaha Cooperative Creamery Association, of Sabetha, Kansas, a creamery which has been particularly successful in improving quality of cream and in lowering hauling costs. One of the factors contributing to lower costs and improved quality has been the use of a bonus system for paying haulers.

Route drivers employed by the Kansas creamery are paid by use of a

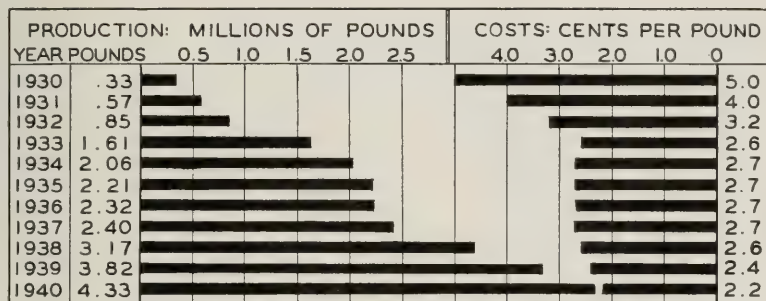


FIG. 1.—RELATION OF VOLUME OF BUTTER PRODUCED TO HAULING AND OPERATING COSTS OF THE NEMAHA COOPERATIVE CREAMERY ASSOCIATION, SABETHA, KANSAS, 1930-1940¹

contract method and a bonus method. Under the contract method, a hauler owns his own truck and is paid so much per pound of butterfat. This puts the hauler literally on a "piece-work" basis. Under the bonus method, trucks are owned by the company and drivers are paid a base wage plus a bonus.

The bonus system for paying route drivers was first introduced in 1934. Under this system the creamery pays a base wage of \$80 per month for hauling the cream of 135 patrons. For each patron above the base quota a bonus of 40 cents a patron per month is paid up to 75 patrons. As a maximum, each drivers' potential bonus is thus \$30 a month above his base wage. While usually two pick-ups are made for each patron each week, a patron is considered to be active if five deliveries a month are made with a minimum of 10 pounds of butterfat weekly.

Company-owned trucks operate in definitely prescribed areas within a twenty-mile radius from the creamery thus reducing to a minimum the overlapping and duplication of routes. Contract haulers operate in the territory beyond that covered by company-owned trucks. In 1940 about 40 percent of the cream received was hauled by company-owned trucks and 60 percent by contract haulers.

In contrast to the Kansas situation, in Illinois each member cooperative creamery of the Illinois Producers Creameries, has a definite outer limit to the area from which cream is procured.

The Kansas creamery was started in 1930 with approximately 140 patrons. During their first year 327,857 pounds of butter were manufactured at an average cost of 5.01 cents per pound of butter for operating and hauling expenses (Figure 1). The volume of product manu-

¹Data used in figures 1 to 3 were obtained through the courtesy of the management of this association.

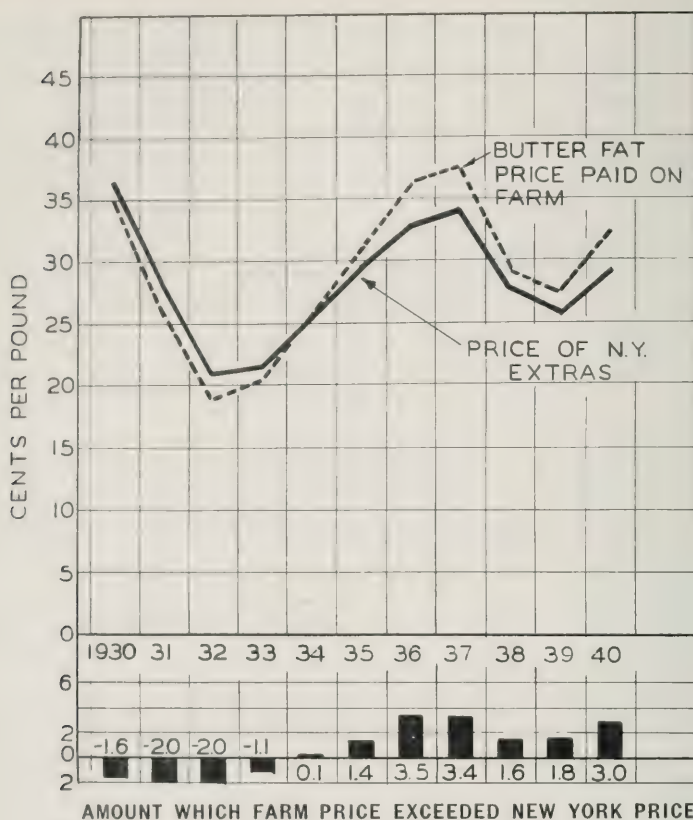


FIG. 2.—PRICES OF 92 SCORE BUTTER IN NEW YORK AND NET BUTTERFAT PRICES PAID ON THE FARM, 1930-1940

factured increased rapidly during the next few years. Primarily as a result of increased volume, costs were gradually reduced so that ten years later (1940) hauling and operating costs had been reduced to 2.23 cents per pound. In 1940 the volume of butter manufactured was 4,333,607 pounds, or 13 times that of 1930. Increased volume permits more efficiently arranged truck routes, and lower unit pick-up costs in addition to lower unit plant costs.

In 1930 when the price of New York 92 score butter averaged 36.6 cents per pound, the price paid by the creamery averaged 35.0 cents per pound of butterfat, or 1.6 cents *less than* the price of butter (Figure 2). Primarily as a result of large volume and lower costs (Figure 3), in 1940 the creamery paid producers 32.5 cents per pound of butterfat or 3 cents *above* the price of New York 92 score butter.

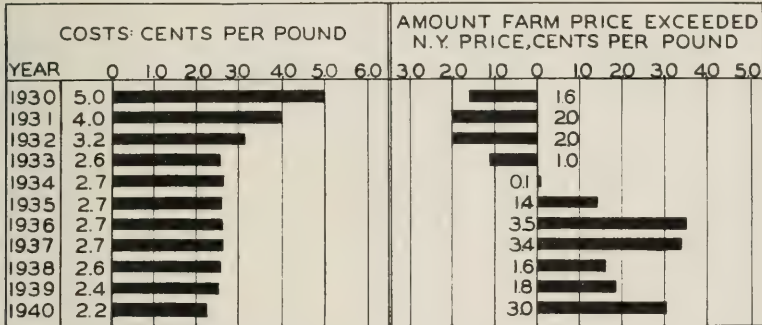


FIG. 3.—RELATION OF HAULING AND OPERATING COSTS TO PRICES PAID PRODUCERS

Ordinarily when butter prices are high, a higher premium above butter prices can be paid farmers for butterfat since overhead costs increase less during such periods than the value of overrun. Lower premiums to creamery producers in 1938 and 1939 can be attributed to low butter prices and to the lower value of overrun.

At least part of the success of the Nemaha Cooperative can be attributed to the use of the bonus system for paying route drivers. By making it possible for drivers operating company-owned trucks to increase their wages, it has enabled the management of the creamery to maintain better labor relations with them. In turn the route drivers have helped the creamery by getting new patrons, by encouraging patrons to improve quality, and by making it possible for the creamery to pay producers higher prices for butterfat produced.

In July, 1941, the bonus system for paying route drivers was adopted with minor variations, by the Farmers' Creamery Company of Bloomington, Illinois.

L. F. TAMMEN

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period . . .	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929 . . .	95	105	104	99	103	103	104	110	110	110
1930 . . .	86	88	89	94	83	87	93	100	89	91
1931 . . .	73	65	62	80	58	58	72	84	68	75
1932 . . .	65	48	41	69	43	43	62	66	47	58
1933 . . .	66	51	45	71	49	51	72	62	50	69
1934 . . .	75	65	61	80	57	55	69	72	64	75
1935 . . .	80	79	82	81	64	65	80	78	74	87
1936 . . .	81	81	86	80	74	82	103	89	86	103
1937 . . .	86	86	96	84	80	87	103	98	102	113
1938 . . .	79	69	69	80	72	81	101	92	78	88
1939 . . .	77	65	65	78	72	81	97	99	92	108
1940 . . .	78	68	69	79	78	90	113	106	105	122
1940 Nov. . .	80	68	73	79	80	101	128	111	116	134
1940 Dec. . .	80	70	74	79	86	105	131	114	122	139
1941 Jan. . .	81	72	78	80	86	90	112	117	121	140
1941 Feb. . .	81	70	76	80	84	88	110	120	127	144
1941 Mar. . .	82	72	76	80	88	94	118	121	131	147
1941 Apr. . .	83	74	82	80	93	100	124	122	135	144
1941 May . .	85	76	83	81	97	108	133	126	144	154
1941 June . .	87	82	87	83	96	105	126	130	152	159
1941 July . .	89	86	91	84	98	103	123	131	153	160
1941 Aug. . .	90	87	92	86	102	111	131	132	158	160
1941 Sept. . .	92	91	99	88	110	...	...	133	163	161
1941 Oct. . .	92	90	93	90	112	...	...	135 ¹¹	167	163
1941 Nov. . .	92	91	93 ¹¹	91	...	...	...	...	...	167 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			November 1940	Current months		
	1924-29	1939	1940		September	October	November
Corn, bu.	\$.81	\$.43	\$.56	\$.56	\$.71	\$.61	\$.62
Oats, bu.	.42	.28	.32	.33	.40	.39	.42
Wheat, bu.	1.30	.67	.81	.80	.96	1.01	1.03
Barley, bu.	.66	.41	.46	.48	.52	.65	.62
Soybeans, bu.	1.94	.74	.82	.85	1.61	1.45	1.46
Hogs, cwt.	9.97	6.56	5.54	5.70	11.10	10.30	9.80
Beef cattle, cwt.	8.57	8.18	8.84	9.80	9.36	10.40	10.00
Lamb, cwt.	12.22	8.18	8.52	8.40	9.84	9.80	9.90
Milk cows, head	78.00	63.00	65.00	65.00	75.70	86.00	87.00
Veal calves, cwt.	11.27	9.15	9.63	9.80	11.26	12.10	11.80
Sheep, cwt.	6.52	3.44	3.44	3.45	5.25	4.50	4.60
Butterfat, lb.	.42	.23	.27	.30	.37	.34	.35
Milk, cwt.	2.32	1.59	1.67	1.90	2.37	2.40	2.50
Eggs, doz.	.30	.16	.17	.23	.30	.27	.33
Chicken, lb.	.21	.13	.13	.13	.16	.15	.15
Wool, lb.	.36	.25	.30	.33	.36	.38	.40
Apples, bu.	1.59	1.07	1.14	1.10	.85	.90	.95
Hay, ton	13.88	6.05	6.68	6.80	7.94	9.20	9.60
Potatoes, bu.	1.39	.80	.83	.70	.64	.80	.85

¹²For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914

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EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

January, 1942

Number 80

THE MIGRANT LABOR PROBLEM IN SOUTHERN ILLINOIS

The farm labor situation in southern Illinois, especially among fruit and vegetable growers, is likely to become acute in 1942; growers feared a shortage of labor in 1941 which, except in certain instances, did not materialize. Two reconnaissance studies have been made of the migrant labor situation in Union county, where there was the largest number of migrant workers in fruit and vegetables. One of the two studies was made by Rev. Ralph E. Kofoed at the joint request of the Illinois Church Council and the Union County Farm Bureau. The study was made during the period May 16-30, 1941. The second study was made by a representative of the Farm Security Administration, Region 3, conducted during the summer months of 1941 between July 10 and 16; August 12 and 17; and September 21 and 29. The following is a summary of these reports and a statement on the attitude of the growers as gleaned from a meeting of a few growers held in the county on December 12, 1941.

Source and number of laborers in fruit and vegetables. The Farm Security Administration report indicates that the picking season is from May to September, inclusive—for strawberries, early apples, peaches, pears, late apples, and vegetables, the peak season of employment being from May 10 to August 22, the largest demand for labor being from August 5 to August 22 when 5,500 workers were employed in Union county alone.

Kofoed's report indicates that labor used on fruit and vegetable crops in southern Illinois comes about equally from the home or nearby farm or town families, and from among migratory families. Nearby communities supply about one-third of the transient labor, Caruthersville, Missouri, and Bald Knob, Arkansas, being most distant, others coming from Cape Girardeau, Missouri; Collinsville, Murphysboro, Carbondale, Centralia, West Frankfort, and Mounds, Illinois. Homeless transients come from the gulf regions and move through Illinois, following the fruit harvest into Michigan.

The Farm Security report classifies the workers into year-around workers, numbering about 1,200 in Union county engaged in general farm work but usually not in picking. They are paid \$1 per day and given

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

housing and some perquisites; resident seasonal workers numbering from 1,450 to 5,500 in the peach season are mostly out of the county workers, traveling from 10 to 50 miles to work. They are usually paid 17.5 cents per hour for 10 hours of work, 2.5 cents per quart for strawberries, and 25 cents per bushel for beans; migrant workers, from 800 to 2,000 for strawberries and 2,900 for peaches, came mostly from Missouri and Arkansas, many leaving their families behind.

The Kofoed report indicates the pay of from 2 to 2.5 cents per quart, such that the workers seem content with this rate, good workers making from \$2.50 to \$3.00 per day, and family groups, as much as \$10.

Working conditions. The Farm Security Administration report indicates that work was arduous, characterized by stoop and step-ladder labor; workers were pressed and often required to work as many as 14 hours per day. Kofoed's report indicates that workers were free to quit at any time, and many did stay only a day or two, and that growers with poor yields had the most difficulty in getting and keeping workers. The Farm Security Administration report indicates a labor shortage was feared in 1941, but it did not occur, except in minor instances. As soon as workers found work elsewhere they were not interested in seeing the job through because of "low wages and poor housing conditions."

Living quarters. Housing conditions were described by the Farm Security Administration report as deplorable. The Kofoed report indicates the family group with no established residence was most numerous; those with established residences making up a third, there being a few unmarried men. Where these families live is solely the workers' concern. Tents, barns, machine sheds, old packing sheds, and other out buildings were used for shelter. Men, women, and children slept together in this way, in some cases as many as 20 sleeping in the same building. Some slept in the open. Meals were cooked over the open camp fire. Water was from the cistern, creek, or spring. What little bathing was done was in the stock pond, creek, or by bucket; the diet was inadequate—cornflakes for dinner, bologna sandwiches, fried bread; some went without the noon meal. Few had stews or other cooked vegetable dishes. Wearing apparel was rough and unkempt, though seldom really dirty or filthy. Health conditions of the workers seemed remarkably good. The Farm Security Administration report indicated that some growers were indifferent to these living conditions, but most conceded the need of improved living conditions but felt unable to supply them because they would require expenditures too heavy for the average grower.

Reasons for migration. The Kofoed report indicated that most migrants were on the road because of loss of employment at home; they

preferred to seek work elsewhere rather than go on relief at home. The average worker is a sincere worker and cooperates with the grower in providing good fruit and getting the best market. Some come back to the same farm season after season. Others are poor pickers and move every day or two. Most are fairly content and friendly; many, however, were plainly discouraged and unhappy.

Community programs for migrant workers. Neither the growers nor the community had a program developed in the interest of the worker, except to offer work at rates evidently high enough to attract sufficient workers for the needs of the harvest in 1941. Nothing but individual charity was available; the migrant seldom called for such aid. The medical profession avoided attending sick or childbirth cases among the workers. The Red Cross, with available funds, was seldom asked for help. The churches were indifferent to the needs and problems of these people. The Extension Service and farm bureau were the best informed, most interested, and most active in dealing with the situation.

Social contacts. Migrant workers in fruit and vegetables in southern Illinois, according to the Kofoed report, were people without a community. When work is over, the effort is to force them to move on. They are usually clean, honest workers, but family ties are about the only group ties for these workers. Children are kept with the family, being taken out of school early in order to go with the family. Very few are church members; a few indulge in petty thievery; drinking is fairly common among the men; irregular sex relations were evident among a few; but on the whole, they were not any worse than could be found in the community. The majority are people of principle and decency. Their life lacks recreation and is generally drab and dull.

Recommendations

The Kofoed report makes five recommendations:

1. Encourage a plan for a maximum use of local help.
2. Use the employment service as a central clearing house for help.
3. Encourage employers to provide decent housing facilities, including clean water, sanitary toilets, and decent privacy for wholesome family life.
4. Provide for emergencies such as accidents, sickness, childbirth, and death by use of the present community facilities, adapting where possible to the needs of the migrants.
5. Develop a school, church, and community recreational program which will take in members of the families of the migrants.

The Farm Security Administration recommendations are that since

unattractive wages, poor transportation facilities, lack of suitable housing, and other labor opportunities opening up, such as at the Illinois ordnance plant located at Crab Orchard Lake in Williamson county, are likely to cause a labor shortage in the area in 1942, a permanent housing program for local farm laborers and temporary facilities for seasonal farm workers be developed. Mobile camps would serve definite needs near Anna, Cobden, and Alto Pass in Union county; near Centralia, Walnut Hill, Alma, and Salem in Washington and Marion counties.

The Grower's Point of View

A meeting of a few growers was held on December 12, 1941, to discuss the two reports—the Kofoed report and the Farm Security Administration report. The impressions the writer received from conversations with those who attended the meeting were first, that the Kofoed report was looked upon as stating quite fairly the situation relative to migrant strawberry pickers, that individual growers should be more responsible for providing decent housing; second, the growers do not favor setting up mobile camps, as recommended in the Farm Security Administration report. One reason for this objection was that such camps would provide the opportunity for the unionization of farm labor in the fruit and vegetable industry in southern Illinois.

The growers are willing to develop a program along the following lines:

1. Call a meeting of growers and employment agency leaders to work out a procedure for centralization of registration of workers.
2. Make efforts to employ WPA workers—insist on closing WPA offices from March 15 to September 1.
3. Give assistance in housing migrant help on individual farms.
4. Require sanitary toilet facilities on all farms.
5. Where practical and feasible, provide facilities for bathing and washing of clothes.
6. Provide clean drinking water.

Comments by the Author

The Farm Security Administration report, the Kofoed report, and the reports from the growers are all in agreement that better living conditions should be provided for the migrant workers. There is little evidence that there has ever been a labor shortage in the area, the wages paid being sufficient to attract enough workers to get the fruit and vegetable harvest completed, with the exceptions noted above. It is quite possible that if growers agreed upon a wage scale sufficiently in advance

of that of last year, they would doubtless get the workers if they are available.

The conditions under which the workers are forced to live are of primary concern and if mobile or permanent camps will improve these conditions as well as to provide for a better quality of workers, then serious consideration should be given to their establishment.

A possible procedure for 1942 would be:

1. Set up a county growers and employees committee to:
 - a. Weigh recommendations made above.
 - b. Visit migrant labor camps already established.
 - c. Study carefully the possible labor needs in 1942 and the possible resident supply.
 - d. Develop a program of housing and sanitation agreeable to all parties concerned, preferably on the farms themselves.
 - e. Work out a program of community recreation and social welfare making full use of present community facilities.

2. Develop a unified and centralized employment registration system with an advisory board representing all interests. This board might consider not only the problem of supplying the needed workers for fruit and vegetable harvest, but also fair wage scales, housing problems, and especially the use of as much resident labor in 1942 as is possible.

The migrant labor problem in southern Illinois is more than a problem of providing adequate labor for the harvest of fruit and vegetable crops. It is also a problem of providing decent living conditions, adequate community services, and effective social control especially for those families who come in to help harvest these crops.

D. E. LINDSTROM

SUGGESTED WAYS FOR LOWERING COSTS OF MILK DISTRIBUTION IN CHICAGO

Milk distribution in Chicago has undergone very rapid changes since 1929. According to a recent report, in 1941, about 49 percent of the Class I or market milk delivered into Chicago was sold through stores, 28 percent was delivered to homes, and the remaining 23 percent was sold to hotels, restaurants, hospitals, and other institutions (Fig. 1). Adding store sales and bulk sales to hotels and similar outlets, the report shows that 72 percent of all milk purchases were wholesale, while the remaining 28 percent were home deliveries.

In contrast to the present situation, exhibits presented before the 1940 arbitration committee in Chicago showed that in 1930 only 15 per-

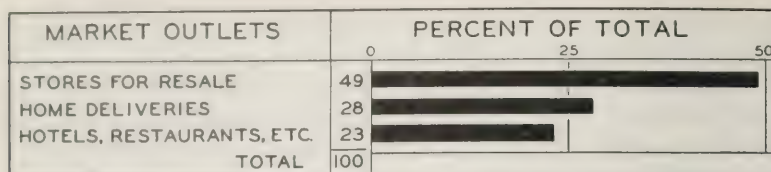


FIG. 1.—HOW CLASS I MILK IN CHICAGO WAS DITSRIBUTED, 1941¹

cent of total milk purchases were wholesale, while 85 percent were retail deliveries to homes.²

Comparison of Consumers Prices for Milk and Milk Costs in Chicago

In reviewing the almost revolutionary change which has come about in the Chicago distribution of milk since 1930, one question which arises is: What has been the underlying cause for this shift in retail distribution from home deliveries to sales at stores and other whole-sale outlets?

While undoubtedly this was the result of several factors, it is probable that the major causes for the increased store sales were the drastic decline in consumer incomes which took place in the early thirties, combined with the savings to be made by buying milk at stores. In 1933, consumer incomes in Chicago averaged about two-thirds of those in 1929.

Earlier studies have shown that the differential between the price per quart at stores and for home deliveries from 1935 to 1940 ranged from *one* cent to 4.5 cents per quart.³ In September, 1941, consumers could buy milk from stores for 13 cents per quart, while wagon prices were 15.5 cents per single quart, 29 cents for two quarts, and 57 cents per gallon.⁴ Since sales of single quarts constituted about 41 percent of total home deliveries, half-gallons, 34 percent, and gallons, 25 percent, the weighted price for home deliveries in September, 1941, was 14.85 cents per quart, or nearly two cents per quart more than the price at stores (Table 1).

The reason for the large proportional increase in sales of bulk milk to hotels, restaurants, and other institutions is difficult to analyze. The increasing number of conventions which have been held in Chicago since

¹From the Lindell Report of Special Committee as published in the City Council's Report of Committees, October 16, 1941, p. 5707.

²From abstract of testimony of the Chicago Milk Wagon Drivers' Union, Dealers' Exhibit No. 9, 1940, p. 8.

³From Illinois Farm Economics, July, 1941, Table 1, p. 375.

⁴From U. S. Department of Agriculture Fluid Milk Report, September, 1941.

TABLE 1.—DISTRIBUTION OF PRICES PAID FOR MILK BY
CHICAGO CONSUMERS, SEPTEMBER, 1941
(cents per quart)

Item	At stores	At homes
Prices to consumers ^a	13.0	14.85
Cost of milk at country plant ^b	6.10	6.10
Receiving station costs ^c.....	.20	.20
Transportation, country plant to city ^c.....	.25	.25
Testing, pasteurizing, bottling ^c	1.40	1.40
Administration ^c.....	.25	.25
Selling and delivery		
Labor ^d	1.60	3.82
Vehicles ^e.....	.24	.94
Miscellaneous ^e.....	.50	.50
Store charge ^f	1.00	.....
Reported costs.....	11.54	13.46
Dealers' margin in excess of reported costs.....	1.46	1.39

^aFrom Fluid Milk Report, U. S. Department of Agriculture, September, 1941. The home-delivered price is weighted according to the proportion of milk sold in quarts, half-gallons, and gallons.

^bBased upon Class I price in 70-mile zone, 2,833 per 100 pounds of 3.5 percent milk (46.5 quarts per 100 pounds).

^cFrom the Lindell Report of Special Committee as published in the City Council's Reports of Committees, p. 5707, October 16, 1941. Distribution costs are reported to be as of May, 1941. Includes bottle costs.

^dFrom Table 2.

^eAverage weekly points per retail route in 1940 were 1,769, and per wholesale route, 6,907, as shown in reference of footnote "d," or a ratio of 3.9 points per wholesale route for each point per retail route. This ratio was used in breaking down the cost of .40 cent per quart reported in reference of footnote "c."

^fThe usual charge for store service when the consumer price was 13 cents per quart. Some stores charged 13½ cents per quart and had a store charge of 1½ cents per quart.

the World's Fair of 1933 and the increasing tendency for Chicago people to dispense with domestic servants and to "eat out" may account for part of this increase in milk sales at these places.

Distribution of Prices Paid for Milk by Chicago Consumers

The rapid increase in prices paid by consumers for milk in 1941 led to an investigation as to causes for these price increases. The results of this investigation were published as the "Lindell" report in October, 1941. This article is based largely upon material included in this report, material included in the 1940 arbitration investigation, and a special study of labor costs of selling and delivery of milk on wholesale routes.

Class I price paid to farmers. A breakdown of costs entering into the prices paid for milk by consumers shows that in September, 1941, farmers received an average of \$2.833 per 100 pounds of 3.5 percent milk, or 6.10 cents per quart (46.5 quarts per 100 pounds). This price was 1½ cents per quart higher than the Class I price of September, 1940, or exactly the same amount by which the condensery price paid producers in September, 1941, exceeded the federal condensery code price in September, 1940. Hence, the increase in the Class I price to Chicago producers was due to the increase in condensery prices paid producers in

TABLE 2.—LABOR COSTS FOR SELLING AND DELIVERY
OF MILK IN CHICAGO, 1940^a

Item	For home deliveries	For resale to stores
Base wage per week	\$48.00	\$49.50
Wages plus commission	51.47	92.79
Relief man and foreman	16.13	17.70
Total wage per route	\$67.60	\$110.49
Average points ^b per route (weekly)	1,769	6,907
Labor costs per point (cents)	3.82	1.60

^aFrom abstract of testimony of Chicago Milk Wagon Drivers Union, Dealers' Exhibit #36, pp. 49 and 50, 1940.

^bA point is equivalent to one quart of milk, one-half pint of cream, or one pound of butter.

adjoining areas. The higher condensery price, in turn, was largely the result of large purchases of canned milk for export under the lend-lease program. Hence, Chicago consumers are now paying about two cents a quart more for milk than a year ago primarily because of our lend-lease program. A secondary cause for increased prices of market milk and canned milk has been the improved domestic demand.

One question asked by consumers is: How can we know whether the premium of 70 cents above condensery prices now exacted for Class I milk is too high or too low? As long as new producers are permitted to enter the market at any time and as long as old producers are permitted to increase their production, any attempt to establish artificially high prices will soon be thwarted through overproduction. If facts now available show that production of market milk is getting out of line with demand, vigilant consumer groups, as well as other groups, can present these facts at public milk hearings and ask that the situation be corrected.

Receiving station costs. The receiving station cost of .20 cent per quart (9.3 cents per 100 pounds) in the Chicago area is very low. In fact, it is about half that of the New York area. The low cost in the Chicago area can be attributed to a large volume per plant resulting from intensive production, ease of procurement because of the level country, and efficiency of plant operation.

Transportation from country plant to city. The dealer pays the cost of hauling milk from the country plant to the city. In the Lindell report, this cost was reported to be .25 cent per quart, or 11.6 cents per 100 pounds of milk.

Testing, pasteurizing, bottling. The plant cost for receiving, testing, pasteurizing, and bottling milk in Chicago was reported to be 1.40 cents per quart. This is somewhat higher than in the California market,

TABLE 3.—COMPARISON OF ITEMIZED COSTS FOR DISTRIBUTING MILK IN PAPER CONTAINERS TO 29 SAFEWAY STORES IN TWO AREAS IN CALIFORNIA IN 1939 AND COSTS OF STORE DISTRIBUTION OF MILK IN CHICAGO IN 1941

(cents per quart)

Cost items	California areas ^a		Chicago ^b
	San Bernardino	Riverside	
Paper containers.....	.947	.947	....
Processing.....	.775	.775	1.40 ^c
Administration.....	.029	.029	.25
Selling and delivery.....	.410	.615	3.34
Sub-total:.....	2.161	2.366	4.99
Store charge.....	1.000	1.000	1.00
Total reported costs.....	3.161	3.366	5.99

^aIllinois Farm Economics, November, 1940, Table 3, p. 425.

^bSee Table 1. These costs do not include the dealers' margin in excess of reported costs of 1.46 cents per quart.

^cIncludes bottle cost.

which reported processing costs of 12 dealers in 1937. These costs ranged from 1.00 cent to 1.64 cents, and averaged 1.19 cents per quart.¹

Administration. The general overhead cost of administration was reported to be .25 cent per quart.

Labor cost for selling and delivery. The labor cost for selling and delivery of milk to homes of 3.82 cents per quart reported by Chicago dealers in the 1940 arbitration investigation² is over twice as much per unit as 1.60 cents, the unit labor cost for store deliveries (Tables 1 and 2). Since the labor cost is the most important item in selling and delivery costs, a major reason for the shift from home deliveries to store sales can be attributed to lower labor costs for store distribution.

Vehicle and other selling and delivery costs. The estimated cost of vehicles for store sales was .24 cent per quart compared with .94 cent per quart for home deliveries. This difference in cost is in line with the difference in average volume per route, wholesale routes in 1940 hauling an average of 3.9 quarts for each quart hauled by retail routes (Table 2).

¹Illinois Farm Economics, November, 1940, Table 1, p. 423.

²Labor costs since May, 1941, have been nearly the same as in early 1940. Since the labor cost in the Lindell report of 3.00 cents per quart was not broken down into store and home deliveries, labor costs as reported by the Chicago arbitration committee of 1940 were used. Costs shown were slightly lower than Borden's labor costs reported for Chicago in 1939 of 1.78 cents for selling and delivery through stores and 4.01 cents per quart for home deliveries. See "Is There a Milk Monopoly?" Theodore G. Montague, President of the Borden Company, 1939, p. 27.

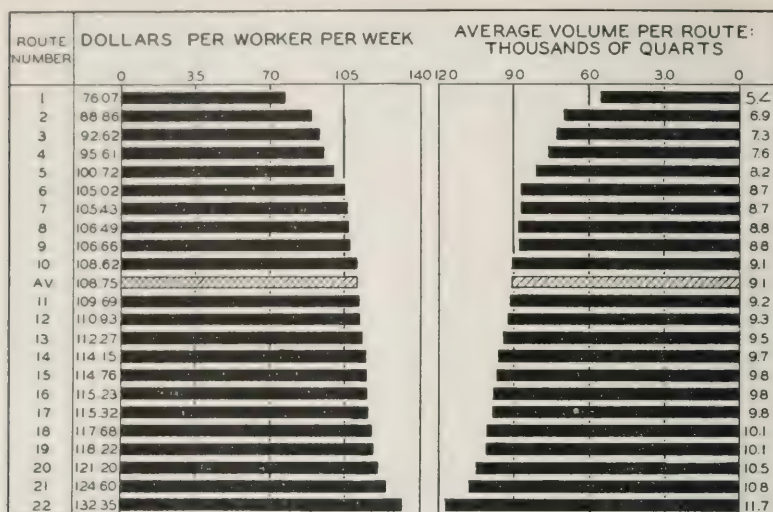


FIG. 2.—AVERAGE WEEKLY WAGES OF 22 REPRESENTATIVE WHOLESALE MILK ROUTE DRIVERS DISTRIBUTING MILK IN PAPER CONTAINERS COMPARED WITH THE AVERAGE VOLUME PER ROUTE, CHICAGO, JUNE TO NOVEMBER AVERAGE, 1941¹

Miscellaneous selling and delivery costs were reported to average .50 cent per quart.

With store milk selling at 13 cents per quart, the usual store charge for handling milk was 1.00 cent since, in September, 1941, dealers charged stores a wholesale price of 12 cents per quart. Some stores charged consumers 13½ cents per quart and had a store charge of 1½ cents per quart.

Dealers' margin in excess of reported costs. Reported costs in September, 1941, totaled 11.54 cents per quart for store milk and 13.46 cents per quart for home deliveries. With the price of 13 cents per quart to store consumers and a weighted price of 14.85 cents per quart for home deliveries, this left a dealers' margin of 1.46 cents per quart for store sales and 1.39 cents per quart for home deliveries in excess of the reported costs.

Under a system of private enterprise, capital is entitled to a fair return for its use under conditions of efficient operation. On the other hand, there are limitations as to what constitutes a fair return. In view of the facts just presented, careful consideration may well be given to

¹Data obtained through the courtesy of two Chicago dealers. Quarts per route include quarts of milk sold and other items such as half-pints of cream and pounds of butter which are considered equivalent to quarts of milk.

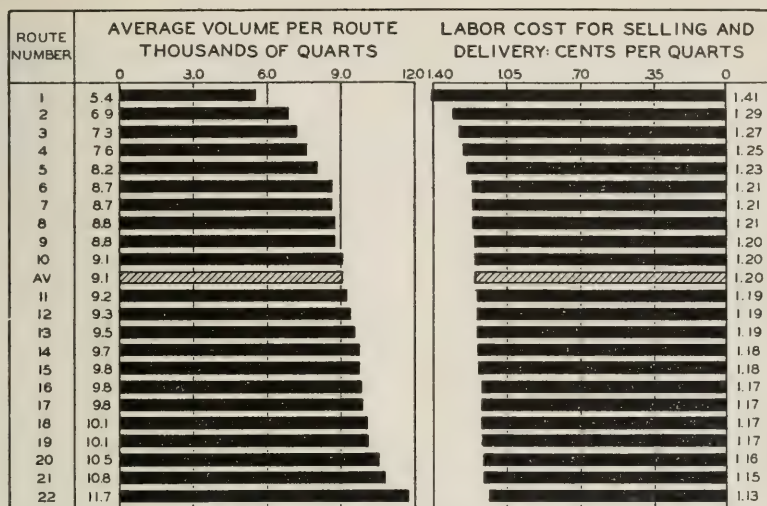


FIG. 3.—AVERAGE VOLUME PER WEEK OF 22 REPRESENTATIVE WHOLESALE MILK ROUTE DRIVERS DISTRIBUTING MILK IN PAPER CONTAINERS COMPARED WITH THE UNIT LABOR COST FOR CHICAGO, JUNE TO NOVEMBER AVERAGE, 1941¹

questions such as: Is $1\frac{1}{3}$ cents to $1\frac{1}{2}$ cents a quart necessary for paying a fair return on capital wisely invested in the milk business? Is it possible that the market milk industry is exacting returns on obsolescent capital? If so, should this practice be permitted to continue? If this margin does not go for capital purposes, what costs not reported should be included?

Chicago Store Distribution Costs Compared With Other Areas

The lowest available costs for wholesale distribution of milk in the United States are those reported for the San Bernardino area in California of 2.16 cents per quart (Table 3).² These costs compare with a cost of 4.99 cents per quart reported for Chicago (Table 1), even when the dealers' margin above reported costs of 1.46 cents per quart was excluded. As reported earlier,³ low costs in the San Bernardino area resulted from (1) the establishment of a dairy plant specifically designed for handling milk in paper containers, (2) the use of exclusive stops—only one dealer per store, (3) the sale of a large volume of milk per

¹Data obtained through the courtesy of two Chicago dealers.

²Unit costs of this dealer in 1941 were no higher than in 1939.

³Illinois Farm Economics, November, 1940, pp. 424-426, and October, 1941, p. 153.

TABLE 4.—WEEKLY WAGES OF MALE WAGE-EARNERS FOR
SELECTED INDUSTRIES IN CHICAGO, 1941

Selected industries	Average weekly wage
Selling and delivery of milk (including commissions)	
Home delivery routes (1940) ^a	\$51.47
Hotels, restaurants, etc. ^b	56.26
Wholesale store routes (1940) ^a	92.79
Wholesale store routes (paper containers) ^c	108.75
Manufacturing industries—all ^d	35.57
Non-manufacturing industries—all ^d	34.82
Trade, wholesale and retail ^e	33.45
Services ^e	23.11
Public utilities ^e	38.46

^aSee Table 2.^bFlat wage included in union contract.^cSee Fig. 2.^dFrom Illinois Department of Labor.^eAdjusted to 1941 basis by multiplying the 1935 wage rates by the percentage which the 1941 non-manufacturing wage rate exceeded that for 1935.

store at low prices, and (4) the distribution of a large volume of milk per wholesale route.

From a practical viewpoint, it is unreasonable to expect all dealers in a market such as Chicago to attain the same efficiency as the San Bernardino dealer. On the other hand, it is clear that the price of milk to Chicago consumers can be materially reduced through use of more efficient methods of distribution.

Labor Cost for Selling and Delivery of Milk in Paper Containers to Chicago Stores

Though milk has been distributed in paper containers in some cities for over a decade, it was not until this past year that Chicago dealers did this on a large scale. As reported earlier,¹ the use of paper containers makes possible lower transportation costs since their use saves about two thirds the space and about half the weight required for glass bottles.

A survey of 22 representative wholesale routes distributing milk in paper containers in Chicago for six months in 1941 showed an average weekly wage (including commissions) of \$108.75 per driver (Fig. 2). Wages ranged from \$76.07 for the driver handling 5,377 quarts² per week, to \$132.35 per week for the driver handling an average of 11,696 quarts per week. The average volume was 9,080 quarts weekly per

¹Illinois Farm Economics, November, 1940, pp. 424-426.²Usually loads are measured by points, one point being equal to one quart of milk, one-half pint of cream, or one pound of butter. To simplify discussion, a "quart" is used here synonymously with "point."

route, or 32 percent higher than 6,907 quarts, the 1940 average shown in the arbitration report (Table 2).¹

Further analysis showed the labor cost for selling and delivery of milk in the 1941 study averaged 1.20 cents per quart (Fig. 3), or 25 percent less than 1.60 cents, the average labor cost in 1940.

What caused the major difference in volume per route and in unit labor costs in 1940 and 1941? While presumably this resulted from several factors, the major cause for these differences can be attributed to larger loads made possible by use of the paper containers, and distribution of a large volume per store. In early 1940, when the earlier figures were recorded, all wholesale milk was distributed in glass bottles, while the routes included in the 1941 study distributed milk in paper containers.

A question which arises in view of economies derived from the use of paper containers is: Does the basis which has been used for wage payments of wholesale drivers distributing milk in glass bottles apply equally well for deliveries in paper containers? Further questions suggested by the very large weekly earnings of wholesale route drivers as shown in both the 1940 study (\$92.79 per driver as shown in Table 2) and the 1941 study (\$108.75 per driver) are: Are these wages in line with those paid retail route drivers? Are they in line with those of workers engaged in other occupations (Table 4)? Is the wage scale established on a basis to discourage store sales of milk? Each of these questions would seem to warrant very careful consideration.

R. W. BARTLETT

THE AVAILABILITY OF FARM CREDIT IN McHENRY COUNTY, ILLINOIS

The food-for-war program is emphasizing increased agricultural production at the present time. Of particular importance is the necessity of increasing the production of dairy products. Dairying is the predominant farm enterprise in McHenry county, where this study was made. The availability of adequate farm capital and credit is of importance if the desired expansion in the production of dairy products is to be accomplished. A survey was made of the 1940 financial operations of 124 representative McHenry county farm operators, and another is now in progress of the 1941 financial operations of these same farmers. The results throw light on the availability and adequacy of credit in that county. The financial data, such as income and debts, refer only to the

¹The volume of milk per wholesale route shown in the arbitration report included that handled on the route by the relief man as well as by the regular driver, while the volume per wholesale route in this 1941 study included only that handled by the regular driver. Hence, actually the difference in volume per route was greater than that shown.

TABLE 1.—FINANCIAL CHANGES BY TENURE GROUPS;
McHENRY COUNTY, ILLINOIS, 1940

Item	Owners	Part owners	Tenants
Number of farms.....	46	15	63
Increase in assets.....	\$558	\$768	\$772
Decrease in liabilities.....	177	104	89 ^a
Increase in net worth.....	735	872	683
Debt ratio: ^b total.....	24	21	19
short-term.....	11	10	19
long-term.....	31	30	...
New borrowings during year.....	\$360	\$451	\$446
New borrowings remaining unpaid at end of year.....	185	262	291
Percent unpaid current borrowings are of new borrowings.....	51	58	65
Gross repayments during year.....	\$537	\$555	\$357
Paid on old debts.....	362	366	202
Percent of total old debts paid ^c	6	7	17

^aIncrease.^bThis refers to percent that specified class of debts were of specified class of assets.^cDebts outstanding at the beginning of the year.

farm operator's share; physical data, such as size of farm or number of cows refer to the entire farm.

Total indebtedness of these operators did not change appreciably in 1940. Long-term debts were decreased by 4.6 percent and short-term debts were increased by 8.7 percent resulting in a net reduction of total debts of 1.0 percent.

Tenure. A summary of financial change by tenure groups is shown in Table 1.

In all groups operators increased their net worths during the year. This increase reflects chiefly an increase in assets; however, owners and part owners reduced their average liabilities. On the average, these farmers owned the greater share of their assets. For owners debts averaged 24 percent of their total assets, for part owners they averaged 21 percent, and for tenants 19 percent.

The extent of the current use of credit is indicated by the new borrowings during the year. These averaged \$360 for owners, \$451 for part owners, and \$446 for tenants. The amount of new borrowings remaining unpaid at the end of the year averaged \$185 for owners or 51 percent of new borrowings, \$262 or 58 percent for part owners, and \$291 or 65 percent for tenants. Payment on old debts (principal outstanding at the beginning of the year) averaged \$362 for owners, \$366 for part owners, and \$202 for tenants. This payment on old debts averaged 6 percent of the total debts outstanding at the beginning of the year for owners, 7 percent for part owners, and 17 percent for tenants.

Debt ratios. To what extent does the degree of indebtedness affect the availability of credit to farmers? The average ratio of debts to assets are shown in Table 2, owners and part owners being combined.

TABLE 2.—FINANCIAL CHANGES OF TENURE GROUPS BY TOTAL DEBT TO PROPERTY RATIOS, MCHENRY COUNTY, ILLINOIS, 1940

Item	Debt to property ratio							
	Owners and part owners				Tenants			
	0	1-19	20-39	40 and over	0	1-19	20-39	40 and over
Number of farms.....	12	13	23	13	15	17	20	11
Increase in assets.....	\$440	\$624	\$594	\$ 780	\$881	\$815	\$425	\$1 187
Decrease in liabilities.....	0	97	222	258	33	56 ^a	9	481 ^a
Increase in net worth.....	440	721	816	1 038	914	759	436	706
Debt ratio: ^b total.....	0	8	31	48	0	9	28	62
short-term.....	0	7	7	29	0	10	28	62
long-term.....	0	10	42	55	...	...	...	...
New borrowings during year.....	\$ 0	\$287	\$522	\$ 597	\$ 13	\$384	\$577	\$ 894
New borrowings remaining unpaid at end of year.....	0	156	227	397	0	290	312	643
Percent unpaid current borrowings are of new borrowings.....	...	54	43	66	...	76	54	73
Gross repayments during year.....	0	\$384	\$744	\$ 855	\$ 46	\$328	\$586	\$ 413
Paid on old debts.....	0	253	449	655	33	234	321	162
Percent of total old debts paid ^c.....	...	13	6	5	...	37	19	6

^aIncrease.^bThis refers to percent that specified class of debts were of specified class of assets.^cDebts outstanding at the beginning of the year.

Among owners, the increase in net worth averaged larger as debt ratios were larger, indicating that it paid to use borrowed funds to increase the size of operations during 1940. All indebted owner groups reduced debts. Tenants, on the other hand, tended to make the greatest financial gains when their debt ratios were lowest, though this relationship was not consistent.

New borrowings during the year averaged substantially larger for both tenure groups as their debt ratios were higher. For the more heavily-indebted owners a larger proportion of new borrowings remained unpaid at the end of the year than for the more lightly-indebted groups; for tenants the relationship was not consistent. Gross repayments were higher for owners with higher debt ratios although the ratio of repayments to total debts was smaller. The same was true for tenants except for the very highest debt ratio group. It is apparent that owners were aiming to reduce mortgage debts but were not hesitating to borrow new working capital when they deemed it to be desirable. Tenants also indicated no hesitancy in borrowing working capital; even the highest debt ratio tenants, who increased their average liabilities by \$481, borrowed an average of \$894. However, this high debt ratio group paid 6 percent of their old debts and liquidated about one-third of their new borrowings during the year in addition to increasing their assets \$1,187 during the year.

TABLE 3.—FINANCIAL CHANGES OF TENURE GROUPS BY SIZE^a OF FARM BUSINESS, McHENRY COUNTY, ILLINOIS, 1940

Item	Owners and part owners		Tenants	
	Small farms	Large farms	Small farms	Large farms
Number of farms	30	31	34	29
Increase in assets	\$420	\$ 794	\$496	\$1 095
Decrease in liabilities	43	274	147 ^b	20 ^b
Increase in net worth	463	1 068	349	1 075
Debt ratios ^c	19	26	22	16
short-term	11	11	21	17
long-term	24	35		
New borrowings during year	\$466	\$ 307	\$343	\$ 567
New borrowings remaining unpaid at end of year	176	212	245	343
Percent unpaid current borrowings are of new borrowings	38	69	72	60
Gross repayments during year	\$509	\$ 581	\$196	\$ 547
Paid on old debts	219	486	98	323
Percent of total old debts paid ^d	6	6	10	24

^aSize of farm is based on number of acres, percent of acres in crops, number of cows in the dairy herd, and number of months of labor used.

^bIncrease.

^cThis refers to percent that specified class of debts were of specified class of assets.

^dDebts outstanding at the beginning of the year.

Size of business. Average financial changes for large and small farm businesses by tenure groups is shown in Table 3.

Under income conditions prevailing in 1940, the larger farms increased their net worths more in proportion to their total net worths than the smaller farms. Increases in assets were larger and reductions in debts were greater or increases of debts were less, for both owners and tenants, on large than on small farms. The larger owner operators had higher debt ratios than owner operators of smaller farms, indicating a tendency to build up size by borrowing. On the other hand the larger tenant operators had lower debt ratios, indicating greater ability to build up capital and repay debts.

All size groups borrowed for current operations. The small owners borrowed more on the average than the large owners and the large tenants more than the small tenants. Gross repayments of all groups averaged between \$500 and \$600 except for the small tenants who paid decidedly less. All groups reduced old debts during the year, both groups of owners by 6 percent; the small tenants by 10 percent; the large tenants by 24 percent. In all comparisons the small tenants reflect less progress: increases in debts, smallest payment on old debts, and less increase in assets than any other group. Small owners also had a small increase in assets. In spite of the relatively poor showing of the small tenant group the fact that they were able to borrow \$343 of new capital during the year indicated that credit was available.

TABLE 4.—FINANCIAL CHANGES FOR TENANTS BY TYPE OF LEASE GROUPS, McHENRY COUNTY, ILLINOIS, 1940

Item	Livestock share ^a 50-50	Livestock share ^b 100 percent	Cash and crop-share
Number of farms.....	15	8	40
Increase in assets.....	\$600	\$452	\$900
Decrease in liabilities.....	176 ^c	63	86 ^c
Increase in net worth.....	424	515	814
Debt ratio: ^d total.....	33	7	16
short-term.....	33	7	16
long-term.....			
New borrowings during year.....	\$710	\$ 71	\$422
New borrowings remaining unpaid at end of year.....	502	56	258
Percent unpaid current borrowings are of new borrowings.....	71	79	61
Gross repayments during year.....	\$534	\$134	\$336
Paid on old debts.....	326	119	172
Percent of total old debts paid ^e	18	41	16

^aLandlord and tenant each own one-half dairy herd.

^bLandlord owns all the dairy herd.

^cIncrease.

^dThis refers to percent that specified class of debts were of specified class of assets.

^eDebts outstanding at the beginning of the year.

Lease type. The 63 tenants had types of leases as follows: 38 cash; 2 crop share; 15 livestock share with ownership of dairy cows divided 50-50 between landlord and tenant; and 8 livestock share with the landlord owning all the cows. Averages by lease-type for these tenants are shown in Table 4, with the two crop-share tenants combined with the cash tenants.

The greatest financial progress was made by the cash-lease group. Tenants, where the landlord owned but half of the dairy cows, were the most heavily indebted. New borrowings during the year were larger for the most heavily indebted group, and were also large for the cash-share tenants. Again these figures bring out the point that it paid to have adequate working capital in 1940 even if one had to borrow to acquire it.

Milk check assignments. There were 17 of the 124 farm operators who assigned a part or all of their milk checks as repayments for debts. Ten of these had debt ratios of over 40 percent, averaging 58 percent. This group was made up of heavy borrowers, obtaining \$1,135 new borrowings on the average and increasing their liabilities by \$529. They also increased their assets by \$1,204 during the year. Farmers using milk check assignments to secure credit do so primarily because of the relatively high risks involved. This procedure requires them to make large repayments.

Developments in 1941. A credit survey is being made this year in the same area and data are being obtained from the same farmers. Although no tabulated data are available on the 1941 credit study, impressions of the enumerators are:

1. New borrowings during 1941 were larger than for 1940.
2. Gross repayments during 1941 were larger than for 1940.
3. There was probably a smaller net increase in short-term borrowings in 1941 than in 1940.
4. No cases were contacted so far where a shortage of available credit was indicated.
5. Interest rates charged by all credit agencies for all types of farm credit have shown no indication of increasing.

Summary.

1. Farmers do not appear to have been hampered by a shortage of credit in McHenry county in 1940. A survey now being made indicates this was also true in 1941.

2. In 1940 total debts were reduced slightly (1.0 percent) but long-term debts were reduced more while short-term debts were increased. Further debt reduction is also indicated in 1941.

3. It would appear that in 1940 the added capital acquired by borrowing increased net earnings.

B. D. PARRISH and L. J. NORTON

CHANGES IN RESIDENCE AND EMPLOYMENT AMONG RURAL YOUTH OF RANDOLPH COUNTY, ILLINOIS, JANUARY TO SEPTEMBER, 1941

From the farmer's standpoint, the problem of migration of youth from farms has become acute this year and is likely to become more acute as war efforts are intensified. Some farmers feel that it will be impossible for them to meet their production goals because they suffer a serious shortage of labor. The situation in Randolph county for the months of January to September, 1941, is, therefore, of interest.

Data were secured on 622 farm and nonfarm young men. One-eighth of 511 young men 18 to 30 years of age on farms in Randolph county in January, 1941, had moved by September, 1941; over one-third of 111 nonfarm young men had moved in this period. A total of 104 migrations from farm to city were recorded, and 40 from city to farm, or a net migration of 64 cityward.

Among 426 young women, over one-tenth of those 18 to 30 years of age on farms had moved in this nine-month period; one-fifth of the rural nonfarm girls had changed residence. A total of 55 migrations from farm to city were recorded; 25 from city to farm, or a net migration of 30 cityward. Thus, there has been a net loss of more than 10 percent of the young people 18 to 30 years of age to farms and rural communities in Randolph county in the nine-month period, January to September, 1941.

Changes in Employment

In the 21 Randolph precincts, 98 changes in farm employment were made by young men; almost one-third were from farm laborer away from home, renter, or attending school, to farm laborer at home. An even higher percentage (40 percent) were from family laborer, partner, farm laborer at home or away from home to renters. Ten left home to become farm laborers elsewhere; 7 family helpers, partners, or renters became owners, and 6 owners became renters and part owners.

Ninety-four changes were made from farm to nonfarm employment; 19 young men went into defense work; 18 became common laborers; 16 became factory workers; 14 were taken into the army; 7 became teachers; and 6, clerks. The others became mechanics, truck drivers, carpenters, and miners, and 2 were unemployed.

Only 24 changes were made from nonfarm to farm employment. Sixteen of these changed from nonfarm workers to farm laborers at home; 7 changed from factory work to renters or family helpers, and 1 came home to be his father's partner. Of the 58 changes made among nonfarm workers, 11 became common laborers; 10 became truck drivers; 9 went into the army; 8 took factory work; 6 went into defense industries; 5 went on WPA or NYA; 4 each became mechanics and clerks; and 1 went into teaching.

Among young women, marriage caused most of the changes made, and most of these married nonfarm workers. Clerical and office work, factory work, teaching, and nursing claimed most of the others making changes. Only a few went into housework, either at home or away from home.

The highest number of changes among young women were among nonfarm workers. Of 57 changes, 38 were from factory work, waitress, clerk, or teacher to nonfarm worker's wife. Seven were from family helper or housework to clerks, office work, or nursing, and 5 were from clerks to housework at home.

Thirty-seven changes were made in farm employment among young women; 15 of these were from farm family helper to wife of owner or renter. Eleven were already married and changed with their husbands from renter to owner, or vice versa. Young women made 34 changes from farm to nonfarm occupations; 21 became wives of nonfarm workers; 6 went into housework away from home; and the others took up factory work, office work, teaching, or other labor.

Only 24 young women changed from nonfarm to farm occupations; 19 of these became wives of owners or renters, 11 having been in factory work.

D. E. LINDSTROM

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	110	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	84	68	75
1932	65	48	41	69	43	43	62	66	47	58
1933	66	51	45	71	49	51	72	62	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	78	74	87
1936	81	81	86	80	74	82	103	89	86	103
1937	86	86	96	84	80	87	103	98	102	113
1938	79	69	69	80	72	81	101	92	78	88
1939	77	65	65	78	72	81	97	99	92	108
1940	78	68	69	79	78	90	113	106	105	122
1940 Dec.	80	70	74	80	86	105	131	114	122	139
1941 Jan.	81	72	78	80	86	90	112	117	121	140
Feb.	81	70	76	80	84	88	110	120	127	144
Mar.	82	72	76	80	88	94	118	121	131	147
Apr.	83	74	82	80	93	100	125	122	135	144
May	85	76	83	81	97	108	133	126	144	154
June	87	82	87	83	96	105	126	130	152	159
July	89	86	91	84	98	103	123	131	153	160
Aug.	90	87	92	86	102	111	129	132	158	160
Sept.	92	91	99	88	110	123	140	133	163	161
Oct.	92	90	93	90	112	161	179	134	167	163
Nov.	92	91	93	91	114 ¹¹	...	...	136 ¹¹	166	166
Dec.	93 ¹¹	94 ¹¹	99 ¹¹	93	...	...	...	...	...	168 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			December 1940	Current months		
	1924-29	1940	1941		October	November	December
Corn, bu.	\$.81	\$.56	\$.63	\$.52	\$.61	\$.62	\$.66
Oats, bu.	.42	.32	.36	.33	.39	.42	.47
Wheat, bu.	1.30	.81	.93	.79	1.01	1.03	1.14
Barley, bu.	.66	.46	.55	.49	.65	.62	.70
Soybeans, bu.	1.94	.82	1.24	.81	1.45	1.46	1.48
Hogs, cwt.	9.97	5.54	9.37	5.80	10.30	9.80	10.70
Beef cattle, cwt.	8.57	8.84	10.07	9.80	10.40	10.00	10.80
Lambs, cwt.	12.22	8.52	9.85	8.80	9.80	9.90	10.60
Milk cows, head	78.00	65.00	80.00	65.00	86.00	87.00	91.00
Veal calves, cwt.	11.27	9.63	11.19	10.20	12.10	11.80	12.40
Sheep, cwt.	6.52	3.44	4.43	3.45	4.50	4.60	4.80
Butterfat, lb.	.42	.27	.33	.34	.34	.35	.35
Milk, cwt.	2.32	1.67	2.05	1.95	2.40	2.50	2.50
Eggs, doz.	.30	.13	.22	.26	.27	.33	.32
Chickens, lb.	.21	.13	.15	.13	.15	.15	.15
Wool, lb.	.36	.30	.37	.34	.38	.40	.40
Apples, bu.	1.59	1.14	1.07	1.20	.90	.95	1.30
Hay, ton	13.88	6.68	8.49	7.30	9.20	9.60	11.40
Potatoes, bu.	1.39	.83	.82	.70	.80	.85	.95

¹² For source of data in tables see previous issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture · University of Illinois · Department of Agricultural Economics

G. L. Jordan, Editor

February, 1942

Number 81

THE CURRENT SITUATION¹

Wheat. The winter wheat crop, in general, continues in promising condition, with recent additional moisture favorable to growth in some eastern sections. Wheat stocks in the United States as of January 1, 1942, are estimated at 988 million bushels. This is 169 million bushels above a year earlier and 381 million bushels above 2 years earlier. The Commodity Credit Corporation is offering 100 million bushels of wheat for sale to feeders at 85 to 90 cents a bushel to relieve the wheat surplus and conserve corn and maintain a favorable livestock-feed ratio.

Feed grains. Prices of corn and oats changed very little during the past month. Increases in the price of corn and other feed grains from present levels will be limited by recent measures taken by the Department of Agriculture to make available adequate feed supplies for increased production of livestock products. On February 1 about 70 million bushels of 1941 corn and 180 million bushels of old corn were under seal and 90 million bushels were owned by the Government.

Hogs. The winter peak in hog marketings was reached in mid-January. The seasonal decrease in marketings from mid-January through March or early April may be greater than in that period last year. Hog prices advanced sharply in late January and early February. Ceilings on prices of live hogs are being considered.

Beef cattle. Slaughter supplies of well-finished cattle may continue large throughout the late winter, but they are expected to be reduced relative to a year earlier during the spring and summer. Prices of choice steers are expected to hold better than usual during the spring months because of the fewer number being fed in Corn Belt States.

Dairy products. Production of milk and of most manufactured dairy products is expected to be larger in 1942 than in 1941. As a result of the expected improvement in demand conditions, however, prices of dairy products, except butter, may average somewhat higher than a year earlier. Butter prices have been supported by purchases by the Agricultural Marketing Administration.

¹Based largely on the *Demand and Price Situation*, U.S.D.A.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

Poultry and eggs. Egg production will increase seasonally until April and will continue much larger than a year earlier. Egg prices declined during the past month mostly as a result of the increase in egg marketings, but continue to be much higher than a year earlier. On February 1 farmers indicated they intended to purchase about 12 percent more baby chicks this year than in 1941. The government has supported egg prices in Chicago recently at 27½ cents a dozen.

Soybeans. Factory stocks of fats and oils were reduced nearly 300 million pounds during 1941. A further reduction in stocks probably will occur in 1942, as a result of the high rate of domestic consumption, large purchases for lend-lease, and curtailment of imports from the Pacific region. Soybeans will be supported by the government at \$1.60 a bushel at the farm for No. 1 or No. 2 yellow and green varieties of high oil content.

SOME DISPARITIES IN PRICE INCREASES

It is clear that there has been an inflationary rise of prices during the past year, but the extent to which prices have risen differs among commodities and at different points in the marketing process. Thus average prices received by farmers at local markets rose 43 percent from mid-January, 1941, to mid-January, 1942, while wholesale prices of farm products at central markets (basis January average) rose by 40 percent. Wholesale prices of foods rose 27 percent, but wholesale prices of commodities other than farm products and foods rose only 12 percent. The all commodity wholesale price index (1926 = 100) rose from 88.8 in January, 1941, to 95.5 by January, 1942, an increase of only 18 percent. These indexes together with a number of others are shown for January of 1941 and 1942 in Table 1.

Some wholesale commodity prices have, of course, risen much more than others, for some have been affected by reduced supplies and higher shipping costs as well as by increased wartime demands. Then too, wartime demands have affected certain commodities much more than others, but many of the commodities which might otherwise have risen most have been subjected to price controls which have restricted their rise. The daily index of 28 basic commodities compiled by the Bureau of Labor Statistics (August 1939 = 100) rose from 122.2 on February 20, 1941, to 165.2 on February 20, 1942, an increase of 35 percent. Here again agricultural commodities and foodstuffs rose more than any of the other groups in this index. Domestic agricultural products increased 42 percent, and foodstuffs, 53 percent.

Generally speaking, retail prices have risen by smaller percentages

TABLE 1.—INDEX NUMBERS OF PRICES, JANUARY, 1941, AND 1942

Commodity Groups	January 1941	January 1942	Percentage January, 1942 is of January, 1941
"Farm" prices (1910-1914 = 100)			
Grain.....	84.0	119.0	142
Cotton and cottonseed.....	80.0	143.0	179
Meat animals.....	128.0	166.0	130
Dairy products.....	121.0	148.0	122
All groups.....	104.0	149.0	143
Wholesale prices (1926 = 100)			
Farm products.....	71.6	100.3	140
Foods.....	73.7	93.5	127
Others.....	84.3	94.5	112
All groups.....	80.8	95.5	118
Retail prices (1935 - 1939 = 100)			
Food.....	97.8	116.2	119
Clothing.....	100.7	115.7	115
Rent.....	105.0	108.4	103
Fuel, electricity and ice.....	100.8	104.2	103
House furnishings.....	100.1	117.8	118
Miscellaneous.....	101.9	108.3	106
All groups (cost of living).....	100.8	111.9	111
Prices paid by farmers (1910-1914 = 100).....	123.0	146.0	119

than wholesale prices. The average increase in the cost of living from January, 1941, to January, 1942, was only 11 percent. This is indicated by the Bureau of Labor Statistics index of cost of goods purchased by wage earners and lower-salaried workers in large cities, which rose from 100.8 in January, 1941, to 111.9 for January, 1942. This index includes various component groups—food; clothing; rent; fuel; electricity and ice; house furnishings; and miscellaneous. Of these groups the greatest rise was in foods where prices increased during the year by 19 percent. House furnishings were next with an increase of 18 percent. Clothing was third with an increase of 15 percent. The smallest increases were in rent, and in fuel, electricity and ice. Each of these two indexes rose by about 3 percent.

It should be noted that while the indexes of cost of living and retail prices include only goods and services for consumers whereas the wholesale price indexes include goods used by producers (pig iron, copper, cotton, and so forth), this is not the primary reason for the divergent movements of the two indexes. As is shown by Table 2, similar groups of commodities at wholesale and retail have increased by different amounts. This is typical of at least the early stages of any period of price inflation. It occurs because marketing costs and margins seldom rise as rapidly as the costs of raw materials. It does not mean that part of the rise in wholesale prices is absorbed in the marketing process. For example, if the price of wheat should rise from \$1.00 per bushel to \$1.60

TABLE 2.—PERCENTAGE INCREASES IN PRICE OF WHOLESALE AND RETAIL COMMODITY GROUPS FROM MID-JANUARY, 1941, TO MID-JANUARY, 1942

Wholesale groups		Retail groups*	
Commodity	Percentage increase in prices	Commodity	Percentage increase in prices
Foods	27.7	Food.....	18.8
Textile products	24.1	Clothing.....	14.9
Fuel and lighting materials	8.7	Fuel, electricity and ice.....	3.4
House-furnishing goods	13.6	House furnishings.....	17.7

*These groups are parts of the cost of living index.

per bushel, this would be an increase of 60 percent. Such a rise of wheat prices would of itself justify an increase of only 10 percent in the price of bread at retail. If when wheat sold for \$1.00 per bushel bread was selling for 10 cents per pound loaf, the rise of wheat prices would increase bread costs by only about 1 cent per pound, because under ordinary methods of milling and baking a bushel of wheat yields enough flour for more than 60 one-pound loaves of bread. The increase of 1 cent from 10 cents to 11 cents per loaf would be only 10 percent compared with the 60 percent increase in the price of wheat. Of course, insofar as other costs of milling, baking and delivery increased in an inflation period greater increases in bread prices would be justified. A large part of the retail cost of bread is the cost of labor for baking, selling, and delivery of the bread, and wage rates in most occupations rise more slowly than commodity prices during an inflation.

The Bureau of Agricultural Economics index of prices paid by farmers has risen more than the cost of living index of the Bureau of Labor Statistics. The index (1910-1914 = 100) which stood at 123 in January, 1941, rose to 146 in January, 1942, an increase of 19 percent. The greater rise in the index of prices paid by farmers than in that of cost of living is due partly to the fact that the former includes commodities used in production such as feeds which have risen relatively rapidly.

Mail order houses are a very important source of goods for farmers. As indication of the extent to which mail order catalogue prices have risen, we may take a sample of items from one of the large mail order company catalogues. These items were selected from pages chosen at random. Only items whose catalogue numbers indicated that they were identical were used. The prices given are from the spring and summer catalogues of 1941 and 1942, respectively. These are shown in Table 3. The prices quoted for 1942 average higher than those of the 1941

TABLE 3.—PRICES IN SPRING AND SUMMER MAIL ORDER CATALOGUES

	1941	1942	Percentage 1942 is of 1941
Corn planter.....	\$69.50	\$77.75	111.9
Brooder, 500 chick, electric.....	17.75	22.45	126.5
Overalls, band top.....	.99	1.09	110.1
Overalls, bib.....	1.35	1.89	140.0
Boys' wagon.....	8.50	10.95	128.8
Electric motor, $\frac{1}{2}$ H.P.....	12.95	16.95	130.9
Septic tank, 500 gal. 12 gage.....	36.95	48.50	131.3
Asphalt roll roofing, per roll.....	1.25	1.30	104.0
House paint, 5 gal. lots, per gal.....	2.59	3.15	121.6
Paint brush, 4 in.....	3.35	5.45	162.7
Motor oil, 15 gal. bbl.....	8.25	11.95	144.8
Shorts.....	.35	.49	140.0
Shirts.....	.35	.49	140.0
Wheelbarrow.....	5.75	6.95	120.9
Wheelbarrow.....	10.89	13.50	124.0
Army locker trunk.....	4.98	7.75	155.6
Dress trunk.....	11.95	17.95	150.2
Gladstone bag.....	18.95	27.95	147.5
Tarpaulin, 12' x 16'.....	17.95	25.50	142.1
Camera, Argus C-2.....	25.00	39.75	159.0
Rifle, Winchester 62.....	18.45	24.10	130.6
Storage battery, automobile.....	6.45	7.65	118.6
Brief case.....	3.95	4.95	125.3
Typewriter, Underwood.....	42.95	49.50	115.2
Bed, double-deck.....	22.95	28.95	126.1
Shoes.....	4.85	5.50	113.4
Shoes.....	3.39	3.98	117.4
Sheets, 81" x 99".....	6.77	1.19	154.5
Dinnerware, 32 pc.....	5.49	6.59	120.0
Child's crib.....	11.95	15.95	133.5

spring and summer catalogue by a little more than 30 percent.¹ This is only a very small sample of all the items in the catalogues and should not be taken as evidence that the average increase of all mail order prices was over 30 percent. It is cited only as an example of how prices of articles farmers buy have risen.

A rise of thirty percent in the retail price of a commodity is equivalent, as far as the consumer is concerned, to the imposition of a thirty percent sales tax. Consequently, insofar as this sample is representative of all goods sold by the mail order companies, we may say that mail order patrons in Illinois have suffered a little more from price increases which have occurred than they would from replacing the 2 percent "occupational tax" with a tax of 32 percent.

Of course farmers and other people have benefited from the general price rise insofar as it has tended to increase their incomes. Farmers in particular have, in the past year, gained more as sellers than they have lost as buyers. On the other hand, a large proportion of people who

¹The arithmetic mean of the percentage which the 1942 prices are of 1941 is 131.55; the geometric mean is 130.67. The geometric mean is better for averaging price relatives of this sort than the arithmetic mean which has what is technically known as an "upward bias."

receive their incomes from wages and salaries have had no increase whatever in their incomes. Some people have had their incomes greatly reduced because of priorities affecting the businesses in which they are engaged.

E. J. WORKING

THE EFFECTS OF THE WAR UPON THE FATS AND OILS SITUATION

As a result of war developments in both the Pacific and Atlantic Oceans, the importation of fats and oils and oil bearing materials will be greatly curtailed during 1942, and possibly for the duration of the war. Concurrently, the demand for fats and oils in the United States has increased since the war began, and it is expected to be maintained at a high level. The government has recognized this situation and has taken steps to encourage increased production of hogs and oil bearing crops, especially peanuts, soybeans and flaxseed. The new goals established January 15, 1942, raised the corn acreage goal in the United States from 87 million in 1941 to 92.5-95 million acres, or 8 percent; the increase in the commercial corn area was 10 percent. The goal for peanuts was raised from 1.9 million to 5 million acres, or 155 percent; soybeans, from 5.9 million to 9 million acres, or 54 percent; and flax, from about 3.4 million to 4.5 million acres, or 34 percent. The increase in the number of hogs for slaughter was 14 percent.

Food fats and oils. The estimated consumption of food fats and oils in the United States for the four-year period, 1937-1940, 1940 and a conservative estimate of probable total consumption of fats and oils for 1942, based upon trends apparent in 1941, are given in Table 1. The 1942 estimate of consumption of food fats and oils provides for an increase of consumption over recent years. Whether or not 7 billion pounds of fats and oils will be consumed as food in the United States will depend quite largely upon their availability.

TABLE 1.—CONSUMPTION OF FOOD FATS AND OILS
(Billion pounds)

	1937-1940	1940	Estimated 1942
Butter.....	2.24	2.30	...
Lard.....	1.58	1.93	...
Cottonseed oil.....	1.55	1.38	...
Soybean oil.....	.36	.50	...
Olive oil (edible).....	.06	.05	...
Peanut oil.....	.09	.06	...
Corn oil.....	.16	.17	...
Others.....	.23	.14	...
Total.....	6.27	6.53	7.0

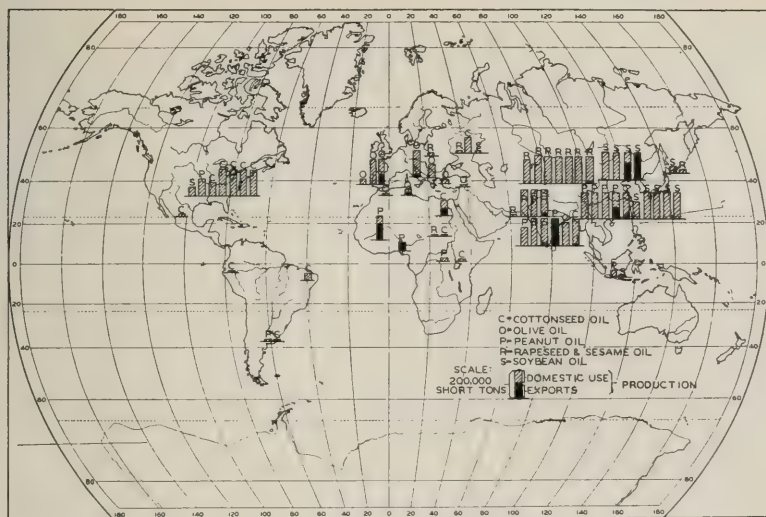


FIG. 1.—WORLD PRODUCTION AND EXPORTS OF MAJOR FOOD OILS OF VEGETABLE ORIGIN, YEARLY AVERAGE, 1924-1936
(Includes Oilseeds Converted to Oil Equivalent)

During recent years we have exported some food fats and oils, principally lard. Small quantities of soybean oil, cottonseed oil, peanut oil and butter have been exported at times. During 1941 unusually large quantities of lard were exported to England under the lend-lease program. Total exports of food fats and oils for the four-year period, 1937-1940, and for 1940 averaged between 260 and 270 million pounds. For 1941 exports exceeded 300 million pounds. We shall continue to export lard and other food fats and oil to England during 1942, possibly to the extent of 350 million pounds.

During past years we have also imported food fats and oils to some extent. For the period 1937-1940, imports practically offset exports, but in 1940 imports declined to approximately 84 million pounds, a large fraction of which was olive oil. A further sharp decline in imports occurred in 1941 and it is doubtful if any significant quantities of food fats and oils will be imported in 1942.

The total amount of production that will be necessary to provide for domestic consumption of food fats and oils in the amount of 7 billion pounds and exports of 350 million would total 7.35 billion pounds. Production of food fats and oils in the United States in 1940 is estimated at 6.1 billion pounds and for 1941 at 6.3 billion pounds. This would leave a deficit on the basis of 1941 production of one billion pounds in food fats

and oils alone. For 1942 we are assured of a substantial increase in lard production, possibly as much as one-half billion pounds, and an increase in soybean oil production from the 1941 crop of about one-quarter billion pounds. There may also be some increase in butter production in 1942. On the whole, it would appear that even without the very substantial increase called for in the acreage of soybeans in 1942 and without the anticipated increase in the acreage of cotton, no substantial deficit in food fats and oils would be likely unless consumption or exports are expanded beyond the 1941 level. If the increase in soybean acreage that is called for by the new 1942 goals materializes and the yield is equal to the 1941 yield, some additional expansion in consumption and exports of food fats and oils could be provided for.

The areas of production and exports of vegetable oils for food are shown in Fig. 1.

Drying oils. The estimated consumption of drying oils for the three periods is given in Table 2. Linseed oil makes up at least three-

TABLE 2.—CONSUMPTION OF DRYING FATS AND OILS
(Billion pounds)

	1937-1940	1940	Estimated 1942
Linseed oil.....	.56	.59	....
Perilla oil.....	.04	.02	....
Tung oil.....	.10	.07	....
Others.....	.06	.07	....
Total.....	.76	.75	1.00

fourths of the total oils used for drying purposes, that is, for paints, linoleums and similar commercial products. Other industries also use significant quantities of drying oils. The quantity of drying oils used in the United States has varied directly with the condition of business activity, particularly building activity. The consumption of drying oils in 1940 was practically the same as for the preceding years. However, consumption expanded considerably in 1941 and a further expansion is anticipated for 1942. Restrictions upon the volume of private construction may prevent any increase in consumption for that purpose in 1942, although other industries may use larger quantities.

The United States has exported no drying oils, but has been on a net import basis. The chief imports consisted of linseed oil and smaller quantities of perilla, tung, and miscellaneous oils. The estimated imports for the three periods included in this discussion are indicated in Table 3. We shall have difficulty importing tung and perilla oil, but plenty of flaxseed is available in Argentina if bottoms can be obtained for transporting it to

TABLE 3.—IMPORTS OF DRYING OILS

(Billion pounds)

	1937-1940	1940	Estimated 1942
Linseed oil.....	.33	.23	...
Perilla oil.....	.04	.01	...
Tung oil.....	.11	.10	...
Others.....	.06	.08	...
Total.....	.54	.42	.40

the United States. In fact, Argentina has a very burdensome supply of flaxseed at the present time. The import duty on flaxseed has been reduced from 65 to 32.5 cents for the duration of the emergency. This reduction in our tariff will substantially offset the increase in transportation costs caused by the war so that it is possible that at least the usual quantities of flaxseed will be imported from Argentina. Domestic flaxseed production is being encouraged in the United States and supported in price at a level of \$2.10 a bushel at the farm. Under these circumstances it would seem reasonable to expect a production of drying oils in the United States equal to 750 million pounds in 1942, or approximately equal to normal consumption. The quantity imported should adequately provide for the estimated increased consumption in 1942.

The areas of production and export of drying oils are shown in Fig. 2.

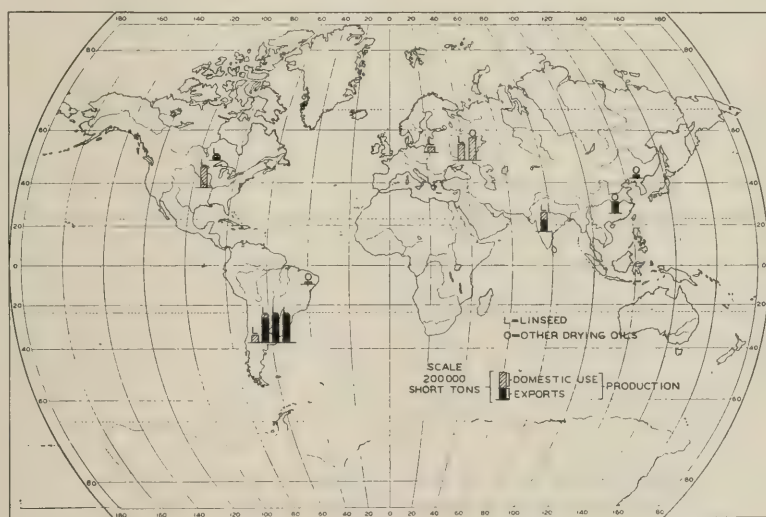


FIG. 2.—WORLD PRODUCTION AND EXPORTS OF THE MAJOR DRYING OILS OF VEGETABLE ORIGIN, YEARLY AVERAGE, 1924-1936
(Includes Oilseeds Converted to Oil Equivalent)

TABLE 4.—DOMESTIC CONSUMPTION OF SOAP FATS AND OILS
(Billion pounds)

	1937-1940	1940	Estimated 1942
Coconut oil.....	.57	.60	....
Palm and palm kernel.....	.33	.19	....
Olive oil, inedible and foots.....	.03	.02	....
Inedible tallow and greases.....	1.04	1.24	....
Others.....	.23	.23	....
Total.....	2.20	2.28	3.00

Soap fats and oils. The per capita consumption of soap appears to be associated with the standard of living of the people of the country. We, in the United States, use very large quantities of soap. Heretofore, we have been able to obtain cheap tropical vegetable oils as a base for our soap. The war in the Pacific, however, has very seriously interfered with imports of tropical oils, particularly from the Philippine Islands and the East Indies, which have been the chief source of our supply (Fig. 3). The domestic consumption of the various soap fats and oils for recent periods and the estimate for 1942 are incorporated in Table 4. It will be observed that inedible tallow and greases make up about 50 percent of the fats and oils used in the manufacture of soap in the United States. Practically all of these inedible tallows and greases are of domestic origin.



FIG. 3. WORLD EXPORTS OF COCONUT, PALM AND PALM KERNEL OILS,
YEARLY AVERAGE, 1924-1936
(Includes Copra and Palm Kernels Converted to Oil Equivalent)

but the rest of the fats and oils used for the manufacture of soap have to be imported. About one-fourth of the total consumption consists of coconut oil of which 95 percent comes from the Philippine Islands, and the rest of it also from the Pacific area. Imports of soap fats and oils are given in Table 5. Total domestic production of soap fats and oils was about 1.2 billion pounds in 1940, about 1.8 billion pounds in 1941, and may be about 1.8 billion pounds for 1942. If imports are maintained at .20 billion pounds and production at 1.80 billion pounds, we would have

* TABLE 5.—IMPORTS OF SOAP FATS AND OILS

(Billion pounds)

	1937-1940	1940	Estimated 1942
Coconut oil.....	.682	.758	...
Palm and palm kernel.....	.351	.238	...
Olive oil, inedible and foots.....	.031	.030	...
Inedible tallow and greases.....	.002	.001	...
Others.....	.031	.023	...
Total.....	1.097	1.050	.20

a deficit of 1 billion pounds relative to estimated consumption in 1941 and 1942 of 3 billion pounds. This is the category in which the war in the Pacific has seriously affected the fats and oils situation in the United States.

Planning for 1942. The method that will be followed in 1942 to meet this situation will be to attempt to increase production of all kinds of fats and oils normally produced in this country with special emphasis upon soybean oil, peanut oil, linseed oil and lard, with much less emphasis upon cottonseed oil and butter. In view of the variability of the weather and the possibility that shipping conditions may become so unfavorable that imports are entirely shut off from Argentina and Africa as well as the Pacific area, this would seem to be the only safe course to follow. The farmer is protected by a reasonable loan rate for the products from which domestic fats and oils are produced.

The Illinois farmer will doubtless first consider the advisability of increasing his corn acreage the permissible limit set by the new goals, then increase soybean acreage to offset the net reduction in winter wheat acreage. Some few farmers will be tempted to produce flaxseed in place of oats. Both are good nurse crops for clover. The new loan rate of \$2.10 on flaxseed will appear attractive; but Illinois yields of flaxseed were only 14 bushels an acre in 1941 and 15 bushels in 1940. Then too, oats prices have risen recently in relation to corn, and oats are well established in the rotation and are likely to be kept in the corn belt rotations

in 1942. In considering alternative uses for their land, Illinois farmers may wish to review the articles "Crop Production Costs in 1940" (*Illinois Farm Economics*, October, 1941) and "Relative Returns from Soybeans, Corn, and Oats" (*Illinois Farm Economics*, November, 1941).

A. H. HARRINGTON and G. L. JORDAN

CHANGES IN EMPLOYMENT, AVERAGE WEEKLY PAYROLLS AND EARNINGS, HOURS PER WEEK AND RATE PER HOUR OF WAGE EARNERS IN THE UNITED STATES

There is a close relationship between the level of farm income and the incomes of nonagricultural wage earners. Hence changes in employment and weekly payrolls and earnings of wage earners are of vital significance to farmers. In this study, variations in employment and average weekly earnings of around 18½ million workers engaged in about 90 manufacturing and selected nonmanufacturing industries have been assembled from 1929 to 1941. Slightly more than two-thirds of the total number of nonagricultural wage earners in the country are included.¹

Records of hours worked per week and average rate received per hour also have been attainable for all workers included in this study since the early thirties.

In addition, an index of weekly earnings for the United States compiled by the New York Federal Reserve Bank was used to project this composite index of average weekly earnings back to 1900. Studies have shown that this index of the Federal Reserve Bank was essentially the same as the one computed (Table 1).²

Distribution of employment by industries. Manufacturing and selected nonmanufacturing industries included in this study are composed of five major groups—namely, manufacturing; mining; trade; transpor-

¹The Survey of Current Business of the U. S. Bureau of Foreign and Domestic Commerce each month publishes an estimated number of nonagricultural workers in the United States. This figure includes both salaried workers and wage earners. A special study by the Bureau published in November, 1938, under the title, "Income in the United States," showed that from 1929 to 1937, wage earners constituted 84.3 percent of the total number of workers. From 1929 to 1937, wage earners included in this study constituted 70.8 percent of the total estimated number of nonagricultural workers after salaried workers had been excluded. Since it was impossible to segregate them from data available, a few salaried workers were included in the 18½ million sample. The number of salaried workers included however would not constitute a significant percentage of the total sample.

²(a) The coefficient of correlation between the New York Federal Reserve Bank yearly index of wages (based chiefly on weekly earnings) and the composite index of 18½ million wage earners in the United States from 1929 to 1940 is .99 \pm .004.

(b) The coefficient of correlation between yearly averages of weekly wages of all employees in 25 manufacturing industries in the United States from the National Industrial Conference Board data (Figures from 1915 to 1919 interpolated from "Real Wages in the United States" by P. H. Douglas) and wages of the composite index projected back to 1914 on the basis of the Federal Reserve Bank index from 1914 to 1941 is .95 \pm .01.

(c) The coefficient of correlation between yearly averages of the wages of all employees in about 90 manufacturing industries in the United States from the Bureau of Labor Statistics data and the composite index from 1919 to 1941 is .92 \pm .04. (Note: if the factors were perfectly related, the coefficient of correlation would be 1.00.)

TABLE 1.—COMPOSITE INDEX OF WEEKLY EARNINGS IN UNITED STATES

Year	Weekly earnings	Indexes (1914 = 100)	Year	Weekly earnings	Indexes (1914 = 100)
1900.....	\$ 8.26 ^a	70 ^a	1929.....	\$26.17 ^b	223
1901.....	8.49	72	1930.....	25.18	214
1902.....	8.72	74	1931.....	23.54	200
1903.....	9.18	78	1932.....	20.12	171
1904.....	9.18	78	1933.....	18.64	159
1905.....	9.42	80	1934.....	19.67	168
1906.....	9.77	83	1935.....	20.69	176
1907.....	10.23	87	1936.....	21.72	185
1908.....	9.86	84	1937.....	23.16	197
1909.....	10.23	87	1938.....	22.40	191
1910.....	10.81	92	1939.....	23.63	201
1911.....	10.93	93	1940.....	24.49	208
1912.....	11.17	95	1941.....	27.45	234
1913.....	11.63	99			
1914.....	11.75	100			
1915.....	11.98	102			
1916.....	13.03	111			
1917.....	14.65	125			
1918.....	17.79	152			
1919.....	20.59	175			
1920.....	24.31	207			
1921.....	22.56	192			
1922.....	20.10	188			
1923.....	23.84	203			
1924.....	24.31	207			
1925.....	24.77	211			
1926.....	25.61	216			
1927.....	25.59	218			
1928.....	25.82	220			

^aData from 1900 to 1928 were obtained from the Federal Reserve Bank of New York, Research Department, "Index of Estimated Composite Wages in U. S." This index, based chiefly on weekly earnings is composed of the following groups: manufacturing, railways, clerical, teachers, building, farm, road building, retail trade, bituminous coal mining, telephone and telegraph, power and light, hotels, and laundries. Weekly wages from 1900 to 1928 were computed by multiplying average weekly earnings in 1929 of 18½ million wage earners computed by indexes of each year 1900-1928 on the basis of 1929 equalling 100.

^bFrom 1929 to 1941, see Table 2 and Figure 3 for source.

tation, utilities and communication; and service industries in the United States (Table 2). A study of employment from 1929 to 1941 shows that 18,885,000 nonagricultural workers were included in these groups in 1929. Of this number in 1929, there were a total of 8,369,000 employed in manufacturing; 6,249,000 in the trade group; 2,746,000 in transportation, utilities and communication group; 939,000 in mining; and 582,000 workers in the service group.

Total manufacturing and nonmanufacturing industries groups. From the total of 18,885,000 nonagricultural wage earners included in this study in 1929, employment declined to 13 million workers in 1932 (Figure 1). From this point employment increased to 17.6 millions in 1937 but dropped to about 16 million workers in 1938. With a revival of business, employment increased to 17.3 million workers in 1940, and to 19.4 million workers in 1941. The 1941 figure was thus 2.9 percent higher than that for 1929 (Table 2).

TABLE 2.—EMPLOYMENT,^a AND AVERAGE WEEKLY EARNINGS^b IN SELECTED INDUSTRIES IN UNITED STATES, 1929 AND 1941

	Employment (In thousands)		Percent change	Average weekly earnings		Percent change
	1929	1941		1929	1941	
Manufacturing.....	8,369 ^a	10,076	+20.4	25.03 ^b	28.03	+12.0
Mining, total.....	939	680	-27.6	27.50	29.89	+8.7
Bituminous coal.....	459	395	-13.9	24.10	29.69	+23.2
Anthracite coal.....	143	71	-50.3	30.97	25.86	-16.5
Metalliferous, mining.....	110	85	-22.7	29.81	31.43	+5.4
Quarrying and nonmetal, mining.....	95	47	-50.5	23.67	24.57	+3.8
Petroleum ^c	132	81	-38.6	36.36	35.89	-1.3
Trade, total.....	6,249	6,057	-3.1	25.81	24.27	-6.0
Retail.....	4,644	4,552	-2.0	22.26	21.22	-4.7
Wholesale.....	1,605	1,505	-6.2	36.07	33.49	-7.2
Transportation, utilities, and com- munication, total.....	2,746	2,031	-26.0	31.60	36.41	+15.2
Class I steam railways ^d	1,687	1,147	-32.0	33.51	37.85	+13.0
Telephone and telegraph.....	504	435	-13.7	25.02	32.74	+30.9
Electric railways and motor bus.....	281	194	-31.0	33.18	36.15	+9.0
Electricity and manufactured gas.....	274	255	-6.9	30.35	36.36	+19.8
Service, total ^e	582	595	+2.2	18.50	16.82	-9.1
Year-round hotels.....	292	277	-5.1	16.99	15.85	-6.7
Laundries.....	231	251	+8.7	18.84	17.22	-8.6
Dyeing and cleaning.....	59	66	+11.9	24.64	19.34	-21.5
Total nonmanufacturing.....	10,516	9,363	-11.0	27.07	26.84	-0.9
Total manufacturing and non- manufacturing.....	18,885	19,439	+2.9	26.17	27.45	+4.9

^aDivision of Statistical and Historical Research, Bureau of Agricultural Economics. Compiled from Bureau of Labor Statistics data except as noted. Manufacturing data taken from U. S. Bureau of Labor Statistics mimeograph reports Number 10,701 and Number 10,702, January, 1941 and later reports.

^bAverage weekly earnings were computed by dividing total weekly payrolls by the total number of employees for each industry. (Also see Figure 3.)

^cTaken from Department of Commerce national income study; excludes salaried employees.

^dInterstate Commerce Commission data.

^eThese contain some recent slight revisions by Bureau of Agricultural Economics.

The manufacturing industries group. This group is represented by about 90 manufacturing industries in the United States. The data used were assembled by the Bureau of Labor Statistics for the period 1929 to 1941. As stated above, in 1929 there was a total of 8,369,000 wage earners employed in manufacturing (Table 2). From the 1929 level, employment declined to about 5.2 millions in 1932 (Figure 1). By 1937, this had increased to about 8.6 million workers. Employment again declined in 1938 to 7.2 million workers. With improved business conditions the number of wage earners employed in manufacturing increased to 8.5 millions in 1940 and to 10.1 million workers in 1941. Thus in 1941 there were nearly two million more wage earners employed in manufacturing than in 1929, or an increase of 20.4 percent. This increase is in sharp contrast to employment in nonmanufacturing industries which in 1941 had 11 percent fewer employees than in 1929.

The mining industries group. This group is composed of five specific industries, including bituminous coal mining, anthracite coal mining,

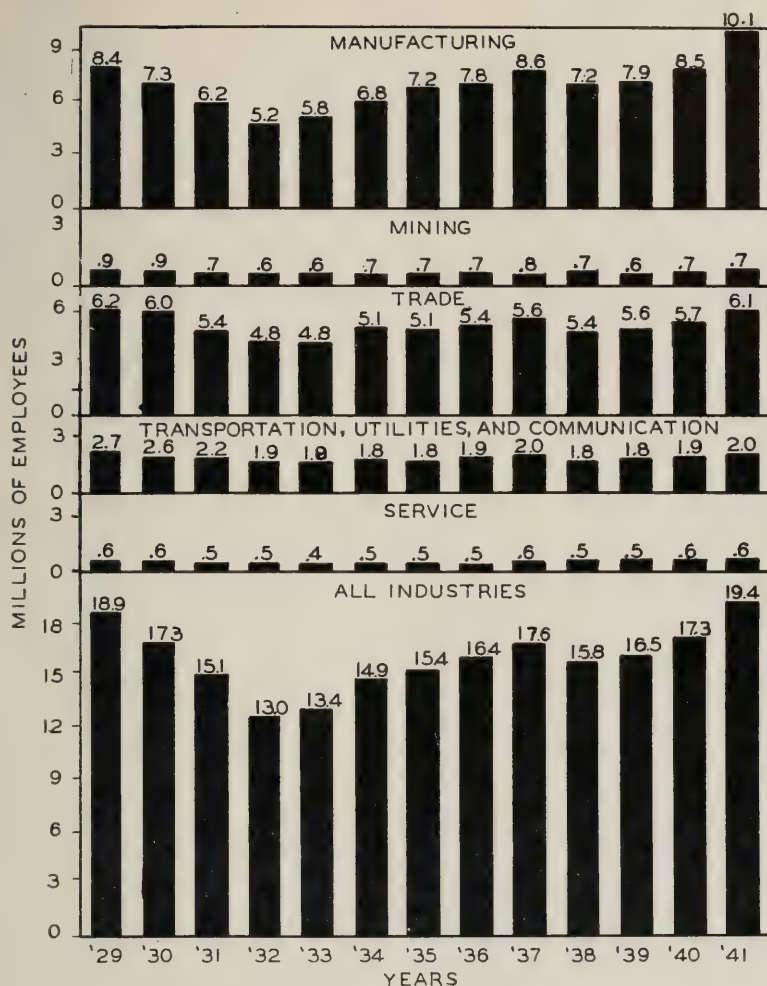


FIG. 1.—EMPLOYMENT OF NONAGRICULTURAL WORKERS ENGAGED IN SPECIFIC INDUSTRIES IN THE UNITED STATES,¹ 1929-1941

metalliferous mining, quarrying and nonmetal mining, and petroleum. As stated above, in 1929 there was a total of 939,000 workers employed in mining in the United States (Table 2). The bituminous coal mines had the largest number of employees, followed in order by anthracite, petroleum, metalliferous, and quarrying and nonmetal mining industries. From

¹Data taken from unpublished thesis on "Chicago Milk Drivers' Wages as Related to General Wage Levels" by O. E. Aylett. (University of Illinois, 1941), Table 3.

the 1929 level, employment in all mining industries declined to 607,000 in 1932, later increasing to 776,000 workers in 1937. From this point employment dropped to 631,000 in 1939, but later rose to 679,000 workers in 1940, and to 680,000 in 1941. Thus there were 259,000, or 27.6 percent, fewer workers in the mining industries in 1941 than in 1929.

The trade industries group. Of the total of 6,249,000 workers employed in retail and wholesale trade in the United States in 1929, retail trade had 4,644,000 workers, while wholesale trade had 1,605,000 workers (Table 2). Employment in total trade declined from the 1929 level to 4.8 million in 1932 (Figure 1). From this point employment increased to 5.7 million workers in 1940, and to 6.1 million workers in 1941, just slightly less than the number employed in 1929.

Transportation, utilities and communication group. This group is composed of four specific industries—namely, Class I steam railways; telephone and telegraph; electric railways and motor bus; and electricity and manufactured gas industries. In 1929, of the 2,746,000 workers employed in this group, 1,687,000 were employed in Class I steam railways. The rank of the other industries in the order of their importance was telephone and telegraph, electric railways and motor bus, and electricity and manufactured gas industries (Table 2). From the 1929 level, employment in this group declined to 1.8 millions in 1933, later increasing to around 2 million workers in 1937. Employment dropped slightly during 1938 and 1939, but returned to the 2 million level in 1941 (Figure 1), 26 percent below the 1929 level.

The service industries group. This group includes year-round hotels, laundries, and dyeing and cleaning industries. Of the 582,000 workers employed in these service industries in 1929, 292,000 were employed in hotels, 231,000 in laundries, and 59,000 in the dyeing and cleaning industry (Table 2). From the 1929 level, employment dropped to 446,000 in 1933, later increasing to 572,000 workers in 1937. Employment declined to a low of 549,000 in 1939, but returned to the 560,000 level in 1940, and to 595,000 workers in 1941. The 1941 level of employment was slightly higher than that for 1929 (Figure 1).

Weekly payrolls. The decline in farm prices in the early thirties was closely associated with the decrease in payrolls of wage earners included in this study. From a total of \$494 million weekly in 1929, payrolls of workers declined to \$249 million in 1933, or approximately half of the total weekly payrolls for 1929 (Figure 2). Increases in farm prices and farm income since 1933 can likewise be attributed, in consider-

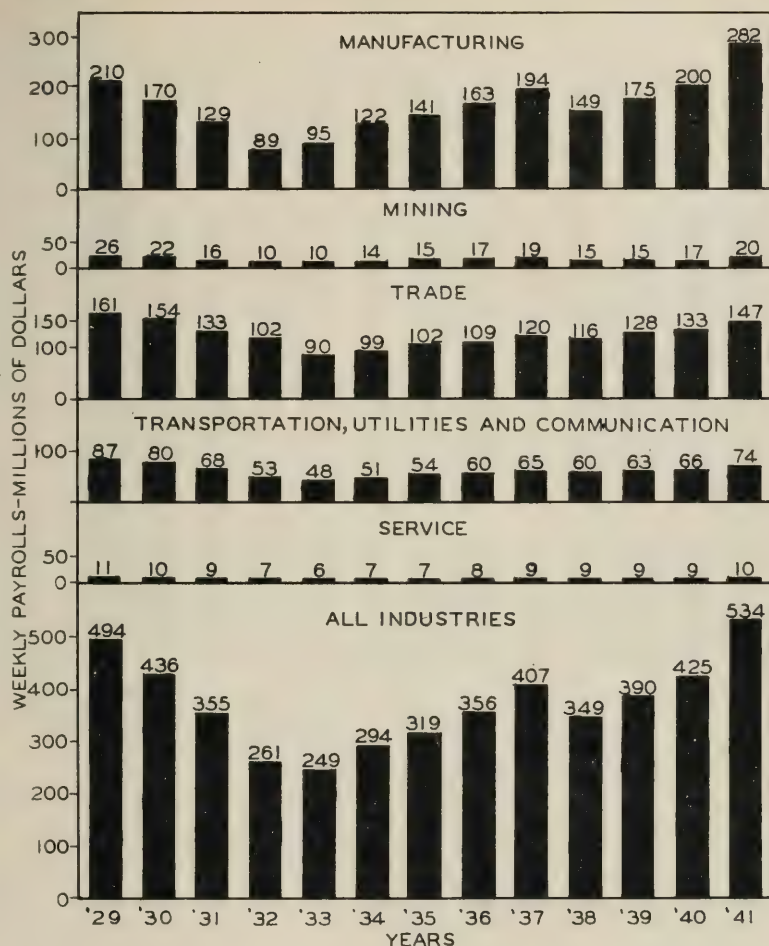


FIG. 2.—WEEKLY PAYROLLS OF NONAGRICULTURAL WAGE EARNERS ENGAGED IN SPECIFIC INDUSTRIES IN THE UNITED STATES,¹ 1929-1941

able degree, to increases in incomes of nonagricultural workers in the United States. From the low of 1933, weekly payrolls of workers included in this study increased to \$407 million in 1937. Following the business decline of 1938, payrolls of industries increased to \$425 million in 1940, and to \$534 million in 1941. Weekly payrolls in 1941 were thus about \$40 million, or 8 percent, greater than in 1929. This higher level

¹Data taken from unpublished thesis on "Chicago Milk Drivers' Wages as Related to General Wage Levels" by O. E. Aylett. (University of Illinois, 1941), Table 3.

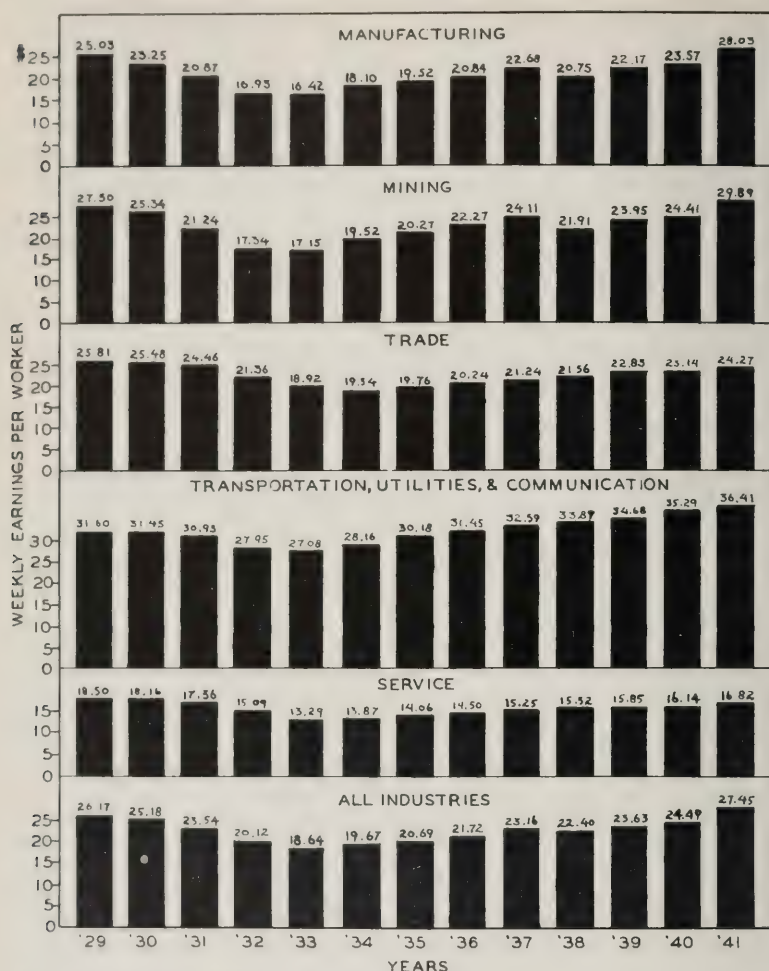


FIG. 3.—AVERAGE WEEKLY EARNINGS PER WORKER OF NONAGRICULTURAL WAGE EARNERS ENGAGED IN SPECIFIC INDUSTRIES IN THE UNITED STATES,¹ 1929-1941

of payrolls in 1941 was the result of a larger number of workers employed, higher rates per hour, and more hours worked per week (See also Figure 1 and Table 3).

Average weekly earnings. Changes in average weekly earnings of nonagricultural workers from 1929 to 1941 are shown in Figure 3. Average weekly wages of workers in all industries included in this study

¹Data taken from unpublished thesis on "Chicago Milk Drivers' Wages as Related to General Wage Levels" by O. E. Aylett. (University of Illinois, 1941), Table 3.

TABLE 3.—AVERAGE HOURS WORKED PER WEEK AND RATE PER HOUR IN SELECTED INDUSTRIES IN THE UNITED STATES,^a 1932 TO 1941

Year	Total manufacturing and nonmanufacturing	Manufacturing	Mining	Trade	Transportation, utilities, and communication	Service	Total nonmanufacturing
Average Hours Worked per Week							
1932.....	37.8	38.2	30.9	.....	43.3	.....	.....
1933.....	38.4	37.8	32.1	.....	43.2	.....	.....
1934.....	38.0	34.5	29.9	41.2	44.0	43.3	41.0
1935.....	39.1	36.5	29.8	41.7	44.5	44.3	41.4
1936.....	41.2	39.1	32.2	43.3	46.4	45.3	43.1
1937.....	40.8	38.6	32.1	43.2	46.1	45.2	43.0
1938.....	38.9	35.5	28.4	42.5	44.5	44.3	42.0
1939.....	40.0	37.6	30.9	42.4	45.1	44.8	42.3
1940.....	40.3	38.1	31.4	42.5	45.5	44.6	42.4
1941.....	41.2	40.4	33.3	42.0	44.4	44.4	42.1
Rate per Hour							
1932.....	53.3	44.3	56.2	.....	64.6	.....	.....
1933.....	48.5	43.4	53.5	.....	62.7	.....	.....
1934.....	51.7	52.5	65.4	46.9	63.9	32.0	51.2
1935.....	52.9	53.5	68.0	47.4	67.8	31.7	52.5
1936.....	52.7	53.3	69.1	46.8	67.8	32.0	52.2
1937.....	56.7	58.8	75.0	49.2	70.7	33.7	54.9
1938.....	57.5	58.4	77.1	50.7	76.2	35.0	56.8
1939.....	59.0	59.0	77.4	53.9	77.0	35.4	59.1
1940.....	60.8	61.9	77.9	54.5	77.6	36.2	59.9
1941.....	66.6	69.4	89.7	57.7	82.0	37.9	63.8

^aData from an unpublished thesis, on "Chicago Milk Drivers' Wages as Related to General Wage Levels," by O. E. Aylett, (University of Illinois, 1941), Table 3.

declined from an average of \$26.17 per week in 1929 to \$18.64 per week in 1933. From this point, earnings increased to an average of \$24.49 per week in 1940 and to \$27.45 per week in 1941.

Average hours per week and rate per hour. Changes in the average number of hours worked per week and the rate of pay per hour are shown in Table 3. Average hours per week increased from a low of 37.8 hours in 1932 to 41.2 hours per week in 1941. Rate earned per hour increased from a low of 48.5 cents in 1933 to 66.6 cents per hour in 1941.

In conclusion, it should be noted that this average weekly earnings index of around 18½ million wage earners can be kept up to date from the sources of data referred to in this study. Records of changes in employment, average weekly payrolls and earnings, hours worked per week, and rate per hour of these five groups of nonagricultural wage earners, if kept up to date currently and correctly interpreted, might well add to our understanding of farm income fluctuations.

O. E. AYLETT

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ¹	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁴	In purchasing power ⁷			
Base period . . .	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929.....	95	105	104	99	103	103	104	110	110	110
1930.....	86	88	80	94	83	87	93	100	89	91
1931.....	73	65	62	80	58	58	72	84	68	75
1932.....	65	48	41	69	43	43	62	66	47	58
1933.....	66	51	45	71	49	51	72	62	50	69
1934.....	75	65	61	80	57	55	69	72	64	75
1935.....	80	79	82	81	64	65	80	78	74	87
1936.....	81	81	86	80	74	82	103	89	86	103
1937.....	86	86	96	84	80	87	103	98	102	113
1938.....	79	69	69	80	72	81	101	92	78	89
1939.....	77	65	65	78	72	81	97	99	92	108
1940.....	78	68	69	79	78	90	113	106	105	123
1941 ¹¹	87	82	87	85	101	116	135	129	149	156
1941 Jan.....	81	72	78	80	86	90	112	117	121	140
Feb.....	81	70	76	80	84	88	110	120	127	144
Mar.....	82	72	76	80	88	94	118	121	131	147
Apr.....	83	74	82	80	93	100	125	122	135	144
May.....	85	76	83	81	97	108	133	126	144	154
June.....	87	82	87	83	96	105	126	130	152	159
July.....	89	86	91	84	98	103	123	131	153	160
Aug.....	90	87	92	86	102	111	129	132	158	160
Sept.....	92	91	99	88	110	123	140	133	163	161
Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	136 ¹¹	165	166
Dec.....	94	95	99	93	134 ¹¹	162	174	140 ¹¹	170	167
1942 Jan.....	96 ¹¹	100	104 ¹¹	95 ¹¹	...	...	...	...	...	170 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			January 1941	Current months		
	1924-29	1940	1941		November	December	January
Corn, bu.....	\$.81	\$.56	\$.63	\$.54	\$.62	\$.66	\$.73
Oats, bu.....	.42	.32	.36	.34	.42	.47	.53
Wheat, bu.....	1.30	.81	.93	.81	1.03	1.14	1.19
Barley, bu.....	.66	.46	.55	.49	.62	.70	.73
Soybeans, bu.....	1.94	.82	1.24	.91	1.46	1.48	1.68
Hogs, cwt.....	9.97	5.54	9.37	7.70	9.80	10.70	10.90
Beef cattle, cwt.....	8.57	8.84	10.07	10.40	10.00	10.80	11.20
Lambs, cwt.....	12.22	8.52	9.85	9.00	9.90	10.60	11.10
Milk cows, head.....	78.00	65.00	80.00	70.00	87.00	91.00	93.00
Veal calves, cwt.....	11.27	9.63	11.19	10.80	11.80	12.40	13.70
Sheep, cwt.....	6.52	3.44	4.43	3.95	4.60	4.80	4.95
Butterfat, lb.....	.42	.27	.33	.29	.35	.34	.34
Milk, cwt.....	2.32	1.67	2.05	1.80	2.50	2.50	2.50
Eggs, doz.....	.30	.17	.22	.17	.33	.32	.30
Chickens, lb.....	.21	.13	.15	.14	.15	.15	.18
Wool, lb.....	.36	.30	.37	.33	.40	.40	.40
Apples, bu.....	1.59	1.14	1.07	1.20	.95	1.30	1.30
Hay, ton.....	13.88	6.68	8.49	8.20	9.60	11.40	12.00
Potatoes, bu.....	1.39	.83	.82	.75	.85	.95	1.10

¹⁻¹²For sources of data in tables see December, 1941, issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

March, 1942

Number 82

IMPORTANT

Do you wish to continue to receive Illinois Farm Economics? If so, please stamp, sign, and mail the enclosed card. The mailing list is being revised as required by law.

THE CURRENT SITUATION¹

"Hogs. Maximum prices for pork have been established by the Office of Price Administration. The order placing ceilings on prices of the major pork products at the highest wholesale prices prevailing during the 5 days March 3-7 becomes effective March 23 for a 60-day period. Maximum prices for lard have been in effect since December. Hog prices have advanced sharply since early December.

"Cattle. Cattle numbers increased about 3 million head during 1941, raising the total number of cattle and calves on farms and ranches January 1, 1942, to slightly more than the peak number reached in early 1934. With cattle numbers now the largest on record, marketings for slaughter can increase considerably during 1942 even though numbers should increase further during the year. Prices of well-finished slaughter cattle have improved during the past several weeks, and some further advance seems likely.

"Sheep. The number of lambs in feed lots at the end of February probably was larger than a year earlier and supplies of fed lambs may be relatively large for several more weeks. The number of early spring lambs to be marketed in the late spring and early summer probably will be a little smaller than a year earlier. Prices of fed lambs have declined somewhat since mid-January.

"Dairy products. The larger number of cows and heifers on farms indicates that both cow numbers and milk production may increase through 1943. However, because of improved demand conditions, prices

¹Quoted from *The Demand and Price Situation*, U.S.D.A., March, 1942.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

received by farmers for milk and butterfat in 1942 may average higher than in 1941.

"Poultry products. The number of potential layers now on farms is large enough to meet the 1942 egg production goal, which is 13 percent larger than the 1942 output. Reaching the goal would provide an ample supply of eggs to meet prospective lend-lease needs even while maintaining per capita consumption in this country at or above the average for the last few years. Egg prices were steady during the past month. Farmers recently indicated that they intended to purchase 12 percent more chicks and start 8 percent more turkey poults this year than last.

"Wool. The 1942 wool clip is being contracted at prices which are about 5 cents a pound higher than a year earlier, the highest in 14 years. At current prices, cash farm income from the 1942 clip probably will equal or exceed the record income of 147 million dollars in 1918. Market prices for most wools are now close to the maxima permitted under present price regulations. Sharp curtailment of new wool use for civilians has been ordered for the second quarter of the year. Because of the large requirements for military fabrics, however, total consumption of apparel wool again will be large in 1942."

OPPORTUNITIES TO INCREASE FOOD PRODUCTION

"Food will win the war and write the peace," said Claude Wickard, Secretary of Agriculture. This statement has special significance in Illinois because the state is located in the heart of the Corn Belt, one of the greatest "bread baskets" of the world; and it is from this area that much of the increased food supply must come.

The production situation. The total volume of agricultural production in Illinois in 1941 apparently established a new all-time high record. The 1942 production goals call for a still greater output of dairy products, meats, eggs, fats, and oils. These goals can be reached only if weather conditions are favorable. Even if the goals are attained, it is probable that the needs for foodstuffs, as those of so many other essential war materials, have been underestimated. With these facts in mind, it is apparent that Illinois farmers should plan for a maximum production of the basic products—meats, fats, eggs, oils, and dairy products for the duration of the war.

Illinois farms normally produce large quantities of grain, fruits, vegetables, and livestock for the nation's markets. This amount, in many Corn Belt counties, is from 15 to 25 times that which is retained on the farms for home consumption.

TABLE 1.—VARIATION IN QUANTITIES OF PRODUCTS SOLD FOR GROUPS OF FARMS IN FARM BUREAU FARM MANAGEMENT SERVICE, 1940

Item	Average of 565 farms	113 with highest earnings	113 with lowest earnings
Amount of products sold			
Pork—pounds.....	34 905	45 895	32 997
Beef—pounds.....	36 239	57 499	28 057
Mutton and wool—pounds.....	5 072	8 203	3 354
Milk—pounds.....	44 427	42 079	33 490
Eggs—dozens.....	918	801	758
Corn—bushels.....	2 957	3 216	2 630
Oats—bushels.....	802	826	739
Wheat—bushels.....	135	188	134
Soybeans—bushels.....	259	298	177
Efficiency factors that effected production			
All livestock efficiency index.....	101	113	87
Crop yield index.....	101	114	86
Labor accomplishment index.....	101	106	96
Horse and machinery index.....	103	111	97
Value of land per acre.....	\$124	\$119	\$127
Size of farm total acres.....	272	286	274
Average number of men for 12 months.....	1.94	2.00	1.97

Moreover, many Illinois farmers can temporarily increase the production of essential food products without permanently damaging their farms. They can do this because they have large areas of dark prairie soils, their farms are family size, their farm plans are flexible, they live close to good markets, the climate is favorable, and they represent a high type of citizenship. It should be kept in mind, however, that there are tremendous differences in the resources of individual farms, and no plan for increased production of crops and livestock can be applied to all alike. Over-all planning, which does not consider the wide variations existing in individual farms, is likely to result in many maladjustments.

The magnitude of production per man and per farm in Illinois is illustrated by the 1940 marketings from 565 family size farms in the Farm Bureau Farm Management Service (Table 1).

These farms furnished full time employment to an average of 1.94 men, yet they produced for market an average of 36,239 pounds of cattle; 34,905 pounds of hogs; 44,427 pounds of milk; 918 dozen of eggs; 3,894 bushels of corn, oats, and wheat; and 259 bushels of soybeans (Table 1).

If all the grain, including meal from soybeans, had been converted into pork at the rate of 500 pounds of feed to 100 pounds of live hog, and if the resulting weight of hog had been added to the weight of meat animals which actually were sold, the sales per farm would have provided the normal yearly consumption of selected food products as follows: meat for 657 persons; milk for 135 persons; flour for 30 persons; and eggs for 45 persons. These computations are based on the following

allowances per persons: beef and pork, 116.8 pounds; milk, 328 pounds; flour, 169 pounds; and eggs, 20 dozen. In addition, enough soybeans were sold off these farms to make 2,322 pounds of oil.

That there is an opportunity to increase still further the production of essential food products on many Illinois farms is indicated by the wide variation in quantities of products sold for groups of similar farms in this study. In fact, the 113 farms with the highest earnings marketed 39 percent more pounds of pork, as well as larger quantities of every other product listed, than did the 113 farms with the lowest earnings. The efficiency indexes indicate that the differences in marketings were due principally to differences in the organization and operation of the farms.

Factors that restrict production. There are a number of "bottle-necks" or "choke-points" which prevent maximum production on many Illinois farms. Some of the more important of these are as follows:

1. The skill and managerial ability of the farm operator is the limiting factor on many farms. During the past quarter-century the Extension Service has done a great deal to increase the efficiency of farm operators through its educational projects and programs. Yet, the wide variation in production of groups of similar farms indicates that much educational work remains to be done.

2. Tenancy problems are another limiting factor. Inequitable leases and uncertain tenures prevent the development of the most desirous cropping systems and the establishment of the most productive livestock enterprises. This is a very difficult problem requiring both education and legislation for its solution.

Lack of father-son business agreements also hampers production on many farms. If the son does not share in the farm earnings, he is tempted to go to the city during this period of high industrial wages.

3. As we approach the need for maximum production there will be need to re-examine the AAA allotments on some river-bottom and level prairie land farms. At the same time, if we plan for maximum feed production over a 5-year period, more soil conserving crops will need to be grown on some farms having rolling land which is subject to serious erosion.

In certain parts of Illinois, wheat may be a better crop than either corn or soybeans from the standpoint of feed production. This will be especially true in some areas which are normally feed deficit areas. Then, too, the wheat may be needed for flour.

4. The growing shortage of labor and transportation facilities make for a decreased use of limestone. For the same and other reasons, sup-

plies of fertilizers are becoming increasingly difficult to get and new marketing problems are developing.

5. The size of the farm unit limits production on some farms and by some farm operators. The difficulties in getting efficient, dependable labor are tending to hamper production on excessively large farms. On the other hand, some operators will not produce a maximum because the size of their farm is too small.

The shortage of labor may cause excessively large units to be broken up among two or three operators, while the opportunities for other employment may cause some small operators to release their land to neighboring farmers, thus reducing the number of small-size inefficient units.

Maximum production, result of most efficient use of all resources on the individual farm. The most effective and intelligent means of attaining maximum production, whether it be for one year or five is for every farmer to put into effect on his farm the kind of program which will use to the greatest possible extent the land, buildings, labor, machinery, and other resources at his disposal. This can be accomplished only through individual farm planning. In fact, individual farm planning is the focal point of the farm production problem. It is the place where all national goals must be applied, if they are to be attained. Moreover, it is a common meeting ground for all agricultural projects and programs, regardless of sponsorship. It is a project of fundamental importance during this period of national emergency, and its value probably will be maintained during the period of reconstruction following the war.

J. B. CUNNINGHAM and L. H. SIMERL

THE INFLUENCE OF KIND OF CROPS AND CROP YIELDS ON FARM INCOME

The Illinois farmer, although he is cooperating in the agricultural conservation program, still has an opportunity to determine for himself the acreages he will grow of most of his crops other than the special allotment crops such as corn and wheat. There will be more opportunity to choose the kinds, as well as the acreages, of crops to grow in 1942 than there was in 1941. The individual's plan of crop production for the duration of the war will want to be made to help win the war, following insofar as possible a well-balanced cropping system and one that will maintain the fertility of the soil.

Cropping systems which give the greatest satisfaction in different parts of the country usually have three characteristics: they include a

TABLE 1.—RELATIVE PROFIT OR LOSS PER ACRE OF IMPORTANT FIELD CROPS GROWN IN CHAMPAIGN AND PIATT COUNTIES, 1936-1940

Crop	Cost per acre	Yield per acre	Farm price ^a	Profit or loss
Corn	\$17.63	54 bu.	\$.53	\$10.99
Soybeans	15.69	27 bu.	.76	4.83
Wheat	14.26	22 bu.	.80	3.34
Alfalfa ^b	18.37	2½ tons	9.00	1.88
Oats	12.52	44 bu.	.26	-1.08
Clover hay ^b	13.06	.95 ton	8.20	-5.27
Soybean hay	19.53	1.7 tons	7.00	-7.77
Alfalfa hay ^c	20.68	3 tons	9.00	6.32
Clover hay ^c	14.92	2 tons	8.20	1.48

^aPrices are to the nearest cent for grain and to the nearest 10 cents for hay.

^bThese figures for alfalfa and clover hay are the average of all the farms in the study.

^cThese figures for alfalfa are the averages of just the farms on which 3 tons of alfalfa and 2 tons of clover were produced an acre.

cultivated crop, a small grain crop, and a hay or pasture crop. The best cropping systems are those that give good balance with respect to the cost of operation and that have high yields of the highest profit crop in each of the groups of crops given above. On livestock farms the crops will need to be chosen so that they fit the needs of the livestock on the farm.

Some crops more profitable than others. Cost of production studies in east central Illinois show that certain crops are far more profitable than others and that the best farm incomes occur where as much of the cropland as the soil fertility will stand is in the higher-profit crops. Under costs and prices that existed during the five-year period, 1936-1940, the three highest profit crops were corn, soybeans, and alfalfa hay. If a yield of at least three tons of alfalfa hay an acre was obtained.

For soybeans to be as profitable as corn under conditions of crop yields and costs of the two crops that existed in 1937-1940 in the thirteen important soybean counties of east central Illinois, the farm price of soybeans would need to be about 2.2 times the farm price of corn. In the rest of Illinois for soybeans to be as profitable as corn, the farm prices of soybeans would need to be about 2.5 times the farm price of corn.³ Based on corn and soybean costs for 1941 and the relative farm prices of these two crops that existed in December, 1941, corn was still the more profitable of the two crops that year.

High-profit crops raise the farm income. The one-fourth of the farms, on which cost of production records were kept in Illinois in 1938, 1939, and 1940, with the *highest* proportion of their cropland in high-

³See the November, 1941, *Illinois Farm Economics* for a fuller discussion of this profit relationship.

profit crops had 81 percent of this land in corn, soybeans, and alfalfa hay. The one-fourth of the farms with *lowest* proportion of their cropland in high-profit crops had only 54 percent of their cropland in high-profit crops. Cropland was all land from which a crop was harvested by man labor. Land in soil conserving crops was not considered cropland unless a crop was harvested by man labor from that land.

The one-fourth of the farms that had the largest share of their cropland in corn, soybeans, and alfalfa hay had farm incomes that were 22 percent above the one-fourth of the farms with the lowest share of cropland in these high-profit crops. It is not correct, however, to assume that all of this wide difference in incomes was due entirely to the difference in the kinds of crops grown. There was little difference between the two groups of farms in their size, or in the amount of livestock fed, but there was some difference in the yield of crops.

Acre yields affect unit costs and farm income. It is a general truth brought out by the farm cost studies that as crop yields increase the cost per bushel of grain or per ton of hay tends to decrease. It is fully realized that if an attempt were made to increase yields indefinitely, a point would finally be reached where the increase in yield would no longer pay for the added cost. Farmers generally have not yet reached that point in the production of crops.

The cost of producing corn on a group of farms in Champaign and Piatt counties in 1940 varied from 25 cents a bushel for the farm with the lowest cost to 62 cents for the farm with the highest corn cost. The average of all the farms under study was 34 cents a bushel. It is not unusual to find that crop costs on certain farms are twice those on others in the same township.

There are two reasons for the wide variations found in the cost of producing a bushel of grain or ton of hay: one is the difference from farm to farm in total acre costs of growing the crop caused by the way the farm is operated, and the other is the difference in the acre yields from farm to farm. Years of cost studies in different parts of Illinois show that differences in yields per acre of crops from farm to farm are usually greater than differences in acre costs, and as a result yield has the greater influence on the cost of producing a bushel or ton of our crops. Figure 1 shows the influence of corn yield on the cost per bushel of corn as an average for the five years, 1936-1940. The same general situation existed in regard to the influence of yield on costs for other crops.

In order to show the influence of crop yields on farm income, the records that were available for farms in east central Illinois for the three years 1938, 1939, and 1940 were sorted into four groups accord-

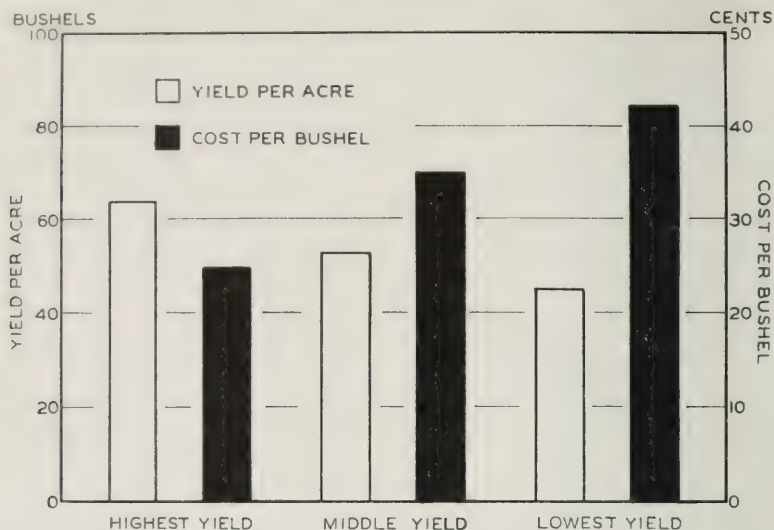


FIG. 1.—THE INFLUENCE OF YIELD PER ACRE OF CORN ON COST PER BUSHEL.
CHAMPAIGN AND PIATT COUNTIES, 1936-1940

ing to the yield of crops per acre. All of the farms were on the same type and quality of soil. The yields of harvested crops on the one-fourth of the farms with high yields were 36 percent above the crop yields on the one-fourth of the farms with low yields. This difference in yield was accompanied by a difference of 21 percent in farm income for the two groups of farms. The high-yield farms were 50 acres larger which also tended to increase the income of these farms.

Good yields of high-profit crops are a paying combination. When combining the influence of the proportion of cropland in different crops with the influence of crop yields, it was found, for the three years 1938, 1939, and 1940, that the one-fourth of the farms that ranked highest in this combined index had an average farm income 32 percent larger than farms with a combined index showing low yield and low proportion of land in high-profit crops.

The two groups of farms fed the same amount of feed to livestock during the three years; but the farms with high yields and the larger portion of their cropland in high-profit crops were larger, which would account for a part of the 32 percent higher farm income.

The four most profitable crops in Illinois are crops that draw heavily on soil fertility; and even though alfalfa, which is one of them, is a legume, it is often allowed to remain on the same field for several years and will draw heavily on certain fertility elements if the hay yield is good.

This means that if the land carrying harvested crops is devoted largely to these high-profit crops, there should be in addition from 20 to 25 per cent of the plowable land in soil conserving crops, or most of the corn and hay should be put through livestock in order to maintain soil fertility. Especially is this true if high yields are obtained from the land that is harvested.

R. H. WILCOX

ADJUSTMENTS IN THE LABOR SUPPLY

The demand for increased agricultural production with a labor shortage and with less machinery and other supplies creates a real problem on many farms. This seeming paradox may be somewhat relieved by adjusting the available labor supply and by using practices which reduce total labor and power requirements.

The most obvious adjustment in the labor supply is longer working days. During the period, 1913-1922, farmers in Hancock county averaged 304.4 days of 10 hours each per year. Livestock farming and the use of horses for power caused a large number of days of work. In Champaign county in the grain area, farmers averaged 257 ten hour days for the four years, 1923-1926; 275 days for the three years, 1931-1933; but only 208.5 days for the five years, 1936-1940. While the amount of work put in is influenced by weather conditions and the amount of machinery available, it has considerable flexibility, particularly in grain areas; in dairy or heavy livestock areas, the workday is already near the limit of efficient work.

Exchange work with neighbors offers one means of meeting peak demands which require an additional force of experienced labor. When less skilled labor must be used, such as family help, or high school boys, or older men without farm experience, care is necessary in planning the work to use such labor on jobs to which it is suited and to avoid undue hazards either to persons or to valuable equipment through operation of machinery by those who lack sufficient training or experience.

Should one attempt to secure additional equipment to offset the labor shortage? This question must be answered for each farm upon the basis of whether the potential labor saving and the expected amount of use would justify the expenditure.

Most efficient use of labor is secured when power units are loaded to their normal capacity. With lighter draft jobs such a loading may call for performing two or more operations at one time, thus reducing the number of times over, or pulling more machines of a given kind. One farmer, for example, borrowed extra rotary hoes from his neighbors and cultivated twelve rows of corn at one operation. Obviously good care of

power units and equipment is essential to secure efficient and economical service and to prolong its usefulness.

Apparent economies sometimes defeat their own ends. In 1940, soybeans planted in 20-24 inch rows, for example, required about 16 percent more labor and 20 percent more power than if drilled solid; but they gave a 12 percent greater yield. At ordinary prices, the higher labor and power input returned the larger profit; at present prices of soybeans, the advantage of the row beans would be much greater.

During recent years improvements in methods have been applied more fully to crop production than to livestock production. This accounts in part for the longer days put in on livestock farms. It is important to make use of adapted practices in livestock production such as the use of self feeders and automatic watering devices to reduce labor demands. By careful planning those livestock labor requirements which occur infrequently can often be scheduled so as not to conflict seriously with fixed crop requirements.

When help is scarce, it is especially necessary to classify the farm work as to time and urgency. This will enable the important jobs to have right of way at the proper time, yet will have preparatory and miscellaneous work out of the way. Some less essential jobs may have to be omitted entirely. The place may be just as productive though less attractive.

The emergency is here; the adjustments need to be worked out on a short time rather than a long-time basis. By its very limitations the situation creates new problems of labor and power adjustment. The mere crowding of the work schedule is likely to give less rather than more efficiency. A careful appraisal of the situation on each farm is necessary in order to develop plans best suited to the emergency. R. C. Ross

CHANGES IN LIVESTOCK PRODUCTION ON 3,379 ILLINOIS ACCOUNTING FARMS IN 1941¹

Illinois accounting farmers had more milk cows, beef cows, feeder lambs, brood sows, spring pigs, summer pigs, and fall pigs on their farms January 1, 1942, than on January 1, 1941. There was no change in the

¹The following analysis is based on inventories secured from farm account books that have been summarized by the Department of Agricultural Economics, University of Illinois, in the State-wide Extension Project and in the Farm Bureau Farm Management Service. The data were tabulated by farming-type areas, and state averages were calculated by weighting area averages by the number of census farms in the area. The percentage changes were calculated from beginning of the year and end of the year inventories for identical farms.

number of feeding cattle. Increases on a percentage basis were large for beef cows, feeder lambs, brood sows, summer pigs, and fall pigs.

The following data indicate the percentage increases in livestock on accounting farms from the beginning to the end of the calendar years 1938, 1939, 1940, and 1941:

<i>Class of livestock</i>	<i>1938</i>	<i>1939</i>	<i>1940</i>	<i>1941</i>
		(percent)		
Milk cows.....	0	2	3	4
Beef cows.....	3	21	10	14
Feeder cattle.....	7	17	12	0
Feeder lambs.....	0	24	-2	25
Brood sows.....	21	4	-2	24
Spring pigs.....	-14	38	-3	4
Summer pigs.....	-10	23	-2	13
Fall pigs.....	23	28	9	23

The following number of litters were farrowed per farm on Illinois accounting farms in 1939, 1940, and 1941:

<i>Time of farrow</i>	<i>1939</i>	<i>1940</i>	<i>1941</i>
Spring.....	6.7	7.4	7.2
Summer.....	1.1	1.0	1.3
Fall.....	4.2	4.3	5.2
Total.....	12.0	12.7	13.7

Milk cows. Milk cows have increased each year since 1938, with the largest increase (4 percent) occurring in 1941. There was an increase of dairy cows in all 9 major type-of-farming areas in 1940, but in 1941 there was a decrease in the three areas in southeastern Illinois which was more than offset by the 6 percent increase in the St. Louis Dairy Area and in northern Illinois.

Beef cattle. Beef cows have been increasing on Illinois accounting farms, as in most other parts of the United States, since 1938. In Illinois this increase is rather uniformly distributed over the state with increases in 1941 in all major farming-type areas. The beef cattle cycle normally includes about 7 years of increasing numbers, and a similar period during which the numbers of beef cattle in the country decline. It is expected that the numbers of beef cows in Illinois will increase beyond the present level since the price of feeder calves will be high again this fall.

Feeder cattle increased 7 percent in 1938, 17 percent in 1939, and 12 percent in 1940, but there was no change in 1941 for the average of the entire state. Less than half of the accounting farms in Illinois had feeder cattle on January 1, 1942, when there were 15 cattle for each accounting farm or 34 cattle for each farm having feeder cattle. There were fewer

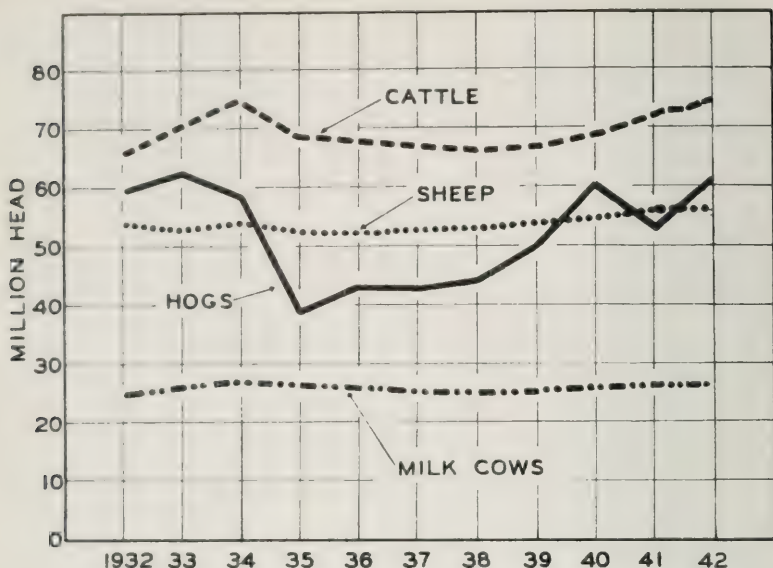


FIG. 1.—NUMBERS OF LIVESTOCK ON FARMS IN THE UNITED STATES ON JANUARY 1, 1932 TO 1942

The numbers of all cattle have been increasing rapidly since 1938. Milk cows have been increasing slowly since 1938, and sheep have been increasing since 1936. The sharp decline in hog numbers in 1940 temporarily interrupted an upswing which started in 1935.

feeder cattle at the end of 1941 than at the beginning of the year on farms in the northwestern part of the state where cattle feeding is an important enterprise.

Feeder lambs. Only 76 Illinois accounting farms had feeder lambs on January 1, 1941, and 80 farms had lambs on January 1, 1942. There were 14,611 lambs at the beginning of the year and 19,074 lambs at the end of the year. All of the increase was in Farming-Type Areas 3 and 4, the central Illinois areas.

Hogs. Illinois accounting farms had 24 percent more brood sows on hand January 1, 1942, than a year earlier and the percentage increase was about the same for gilts as for older sows; at the end of the year 46 percent of all the brood sows inventoried were gilts. The increase in brood sow numbers was rather uniformly distributed over the state with large increases in all areas.

There were fewer sows on farms January 1, 1941, than January 1, 1940; therefore the 4 percent increase in spring pigs on farms January 1, 1942, merely reflects the fact that spring pigs were marketed later in

TABLE 1.—NUMBERS OF LIVESTOCK ON FARMS IN THE UNITED STATES AS OF JANUARY 1
(Thousand head)

Class of livestock	Average 1931-40	1940	1941	1942
Milk cows.....	25 150	24 926	25 478	26 303
Cattle.....	67 575	68 197	71 461	74 607
Sheep.....	52 281	52 399	54 283	55 979
Hogs.....	51 566	61 115	54 256	60 526
Horses and mules.....	16 384	14 481	14 136	13 667
Chickens.....	422 885	438 288	422 909	473 933
Turkeys.....	6 317	8 569	7 252	7 710

1941 than in 1940. The big increase in hog production started with the summer pigs of 1941 as indicated by the number of litters farrowed and by the 13 percent increase in summer pigs on farms January 1, 1942. This increase was sustained through the fall farrowings since there was an increase of 23 percent in the number of fall pigs on hand at the end of the year. The 24 percent increase in sows on farms at the end of 1941 forecasts a record spring pig crop for 1942 if an average number of pigs is saved per litter. There were 35,591 sows on the 3,379 accounting farms January 1, 1941, and 43,503 on January 1, 1942, or 8.9 and 11.0 sows per farm, respectively.

Livestock numbers in the United States. The number of livestock on farms in the United States increased sharply in 1941 and on January 1, 1942, the total in terms of animal units was the largest since 1934. The total for meat animals was the largest on record and the increase in 1941 was almost a record. In terms of grain consuming ability the 1941 increase for all livestock was 6 percent (Table 1 and Fig. 1).

The largest relative increase was in the number of hogs, which was up about 12 percent; this increase was largely the result of an 18 percent increase in the 1941 fall pig crop, but was due in part to an increase in the number of hogs over 6 months old. The hog-corn ratio (16.3 bushels of corn equal in value to 100 pounds of hogs) is very favorable for hog feeders and will likely result in a large farrow of summer pigs.

The continued upward swing in the cycle of cattle numbers during 1941 brought the total of all cattle on farms on January 1, 1942, to a new high record of 74,607 thousand head. There was an increase of over 3 million head in 1941 despite the fact that the commercial slaughter of cattle and calves reached a record tonnage. Slaughter in 1942 may therefore be large and at the same time we may have a further increase in

cattle numbers. With slaughter increasing at a rapid rate, it is likely that beef cattle prices will not advance as rapidly as the general price level even with a high level of domestic demand.

The combined stocks of corn and oats on farms January 1, 1942, were the largest on record; therefore feed grain supplies are ample for the remainder of 1942. The carryover of corn on October 1, 1942, although large, will be appreciably less than the 646 million bushels on hand October 1, 1941. The prospective spring pig crop of 1942 plus the fall crop of 1941 will be enough larger than the two previous pig crops to consume an additional 375 million bushels of corn. Much of this increased disappearance, however, will occur after October 1, 1942, as the spring pig crop now being farrowed will not be marketed until after October 1, 1942. If a high level of livestock production is to be maintained in 1943, a large production of grains and forage is needed in 1942.

P. E. JOHNSTON

WAGES OF CHICAGO MILK DRIVERS AS RELATED TO GENERAL WAGE LEVELS

Labor strikes are costly both for consumers and for participants. In May, 1940, two labor strikes virtually stopped the supply of milk to consumers in Chicago for 10 days. For consumers this meant the loss of a necessary food and a lot of ill-will toward the industry. For the industry this meant a heavy economic loss since on the average Chicago consumers pay around \$240,000 a day for milk and milk products. In reality, losses continued far beyond the period of the active strike since the ill-will of consumers caused further losses in the consumption of milk. Milk sales in Chicago from July to December of 1941 averaged 1.4 percent *less* than those a year earlier. During this same period milk sales for the country as a whole increased 5.1 percent. The ill-will resulting from the Chicago labor strike was one of the causes for failure of Chicago milk sales to increase in 1941 as much as those in other parts of the country.

A question which arises is: Is there any way which would help to prevent a recurrence of labor strikes in the market milk industry?

A lesson from the experience of negotiations between milk producers and distributors may be helpful in answering this question. Twenty-six years ago, in 1916, there was an epidemic of milk strikes in the country. Those strikes were caused by failure to keep milk prices paid farmers in line with increased costs of feed, labor, and prices paid for other farm products.

During the past 28 months we have been experiencing a similar period

of price increases. With the exception of a few markets, increases in the farm prices of milk have been made and accepted with but little friction. Why?

Throughout many sections of the country the fact is now generally accepted by both producers and distributors that prices paid farmers for market milk must be kept in line with prices of manufactured dairy products. Many of our studies at the University of Illinois during the past twelve years have shown the necessity of price equilibriums if milk markets were to be stabilized on a sound basis. At present, not only is the principle of price equilibrium generally accepted, but over 90 percent of the market milk sold in Illinois has a Class I price which is geared to change directly with changes in market prices of manufactured dairy products. Since wholesale prices of these products are particularly sensitive to changes in supply and demand, the present basis for establishing the farm price for market milk is basically sound, and is to the public interest.

What about wages in the market milk industry? Are these established at a level in line with the general level of wages? Do milk route drivers' wages fluctuate up and down in line with the general level of wages? Will a better adjustment of wages in the market milk industry be helpful in averting labor strikes?

In an attempt to answer these questions wages of milk route drivers in Chicago have been compared with wages of male employees in the Chicago manufacturing industries and with the general wage level of the country. Changes in number of milk route drivers also have been compared. These comparisons indicate:

1. Manufacturing wages for male employees in Chicago from 1914 to 1941 have kept closely in line with the general wage level of the country as measured by changes in weekly wages of about 18½ million wage earners in the United States (Fig. 1). Manufacturing wages fluctuated more than the general wage level, being slightly higher in 1919 and in 1941 and slightly lower in 1932 and 1933. For the period, as a whole, however, changes in wages of the two groups were closely related. Thus, from 1914 to 1941, the coefficient of correlation between Chicago manufacturing wages and the general wage level for the country was .96. If the factors had been perfectly related, the correlation would have been 1.00.

2. Milk route drivers' wages (exclusive of commissions) in Chicago lagged behind wages of male employees in the Chicago manufacturing industries from 1916 to 1919 (Fig. 2).

3. Since 1921, drivers' wages have been high as compared with wages

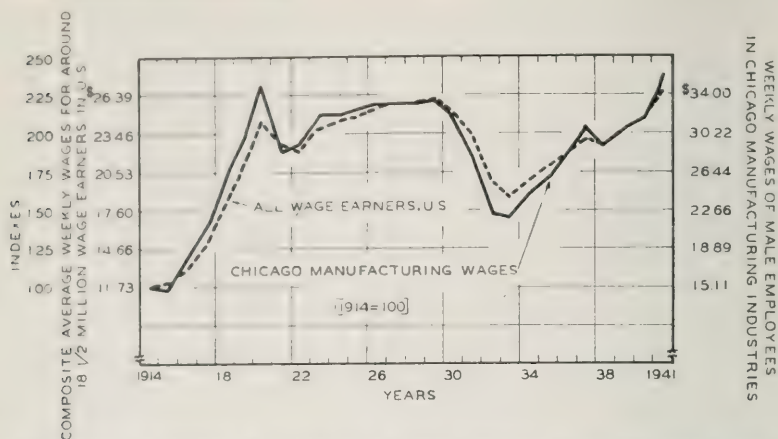


FIG. 1.—AVERAGE WEEKLY EARNINGS OF WAGE EARNERS IN THE UNITED STATES¹ AND AVERAGE WEEKLY WAGES OF MALE EMPLOYEES IN THE MANUFACTURING INDUSTRIES IN CHICAGO,² 1914 TO 1941

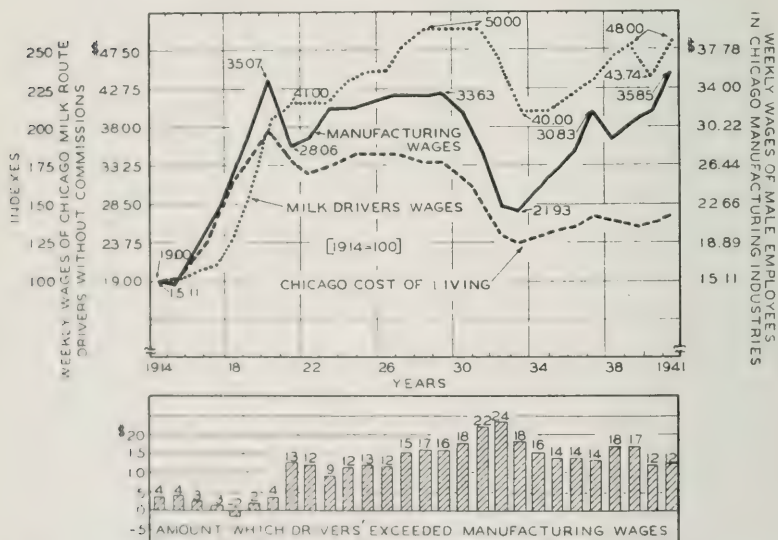


FIG. 2.—WAGES OF CHICAGO MILK ROUTE DRIVERS (EXCLUSIVE OF COMMISSIONS)¹ AND AVERAGE WEEKLY WAGES OF MALE EMPLOYEES IN THE MANUFACTURING INDUSTRIES IN CHICAGO, 1914 TO 1941

¹See Fig. 3, p. 230, February 1942, *Illinois Farm Economics*.

²From Illinois Department of Labor. Data for 1914 and from 1920 to 1922 interpolated from wages of male employees in 25 manufacturing industries as reported by the National Industrial Conference Board; and for 1915 to 1919, from "Real Wages in the United States," by Paul H. Douglas.

³From unpublished thesis on "Chicago Milk Drivers' Wages as Related to General Wage Levels," O. E. Aylott, University of Illinois.

of manufacturing employees. The spread between Chicago milk route drivers' wages and wages of male employees in the manufacturing industries increased from about \$4 a week in 1920 to about \$24 a week in 1932. From this point the spread dropped to around \$14 per week in 1936 but increased to \$18 in 1939. Since 1939, drivers' wages have exceeded those of male employees in the manufacturing industries an average of about \$12 per week.

4. The purchasing power of wages of both manufacturing employees and milk route drivers in Chicago have increased as a result of the relatively small increase in living costs (Fig. 2). Because of the failure of drivers' wages to decline as much during the 1930-1933 depression period, drivers' wages increased only 20 percent between 1933 and 1941; while manufacturing wages increased 63 percent. In contrast the cost of living increased 12.6 percent.

5. The number of organized milk route drivers in Chicago dropped from a total of about 7200 in 1929 to around 4400 in 1940.¹

An analysis of these facts indicates that a basic cause for wage conflicts in the Chicago milk market can be attributed to the failure to keep route drivers' wages in line with the general level of wages. The lag in route drivers' wages from 1916 to 1919 was a cause of tension between route drivers and dealers on the upward swing of wages. The failure of route drivers' wages to decline in line with the general level of wages, particularly in 1931 and 1932, likewise, was a cause for tension between these groups. Furthermore, the retention of relatively high wages in the thirties was one of the factors which encouraged the large increase in store distribution of milk² and the decline in number of milk route drivers.

In view of the need for increased consumption of milk and the ill-will resulting from frequent conflicts between labor and dealer groups, it would seem wise for leaders of both groups to give careful consideration both to methods for keeping milk route wages at a level comparable to the general level of wages and also to methods which will encourage greater wage flexibility on the up and down swings of our business cycles. One method for bringing about greater flexibility of wages was discussed in *Illinois Farm Economics* of August, 1941, under the title "Adjusting Wages to Changes in Cost of Living." Further research presumably will disclose other methods which can be used for effecting greater flexibility in our wage system.

R. W. BARTLETT and O. E. AYLETT

¹From Chicago Associated Milk Dealers, Incorporated.

²*Illinois Farm Economics*, January, 1942, p. 197.

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April 3—Rural Life Forum. "The Rural School in Wartime"—D. E. Lindstrom, E. S. Simmons, O. F. Weber.

"Market Review and Farm Outlook"—G. L. Jordan.¹

April 10—"The Account Keeper's Number One Problem"—R. C. Ross, M. L. Mosher.

April 17—"Reasons for Rationing"—E. J. Working, R. W. Bartlett.

April 24—"Father-Son Partnerships"—J. B. Cunningham, Cleo Fitzsimmons, E. L. Pilchard.

May 1—Rural Life Forum. "War and Rural Protection"—D. E. Lindstrom, E. H. Regnier, Ross T. Saunders.

May 8—"Farm Wage and Labor Problems"—P. E. Johnston, W. D. Budde-meier.

May 15—"Consolidating Country Milk Routes"—R. W. Bartlett, R. J. Mutti.

May 22—"What Are Parity Prices?"—E. J. Working, J. B. Cunningham.

May 29—"Trend in Land Values—Are Higher Prices Justified?"—H. C. M. Case, C. L. Stewart.

June 5—Rural Life Forum. "What About Rural Relief in Time of War?"—D. E. Lindstrom, E. E. Klein, C. L. Stewart.

June 12—"Transportation Problems—Livestock and Grain"—R. C. Ashby, L. J. Norton.

June 19—"Debts and Expanding Farm Production"—L. J. Norton, B. D. Parrish.

June 26—"The Transportation Problem—Horticultural Products"—J. W. Lloyd, V. A. Ekstrom.

¹Each Friday, 12:48 p.m., "Market Review and Farm Outlook"—G. L. Jordan.

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Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Agricultural Situation, Bureau of Agricultural Economics, U.S.D.A.; Agricultural Situation, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .6486. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ¹	Prices paid by farmers ²	U. S. in money ⁵	Illinois				
	All commodities ³	Farm products ⁴				In money ⁶	In purchasing power ⁷			
Base period	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	110	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	84	68	75
1932	65	48	41	69	43	43	62	66	47	58
1933	66	51	45	71	49	51	72	62	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	78	74	87
1936	81	81	86	80	74	82	103	89	86	103
1937	86	86	96	84	80	87	103	98	102	113
1938	79	69	69	80	72	81	101	92	78	89
1939	77	65	65	78	72	81	97	99	92	108
1940	78	68	69	79	78	90	113	106	105	123
1941	87	82	87	85	101	116	135	129	149	156
1941 Feb	81	70	76	80	84	88	110	120	127	144
Mar	82	72	76	80	88	94	118	121	131	147
Apr	83	74	82	80	93	100	125	122	135	144
May	85	76	83	81	97	108	133	126	144	154
June	87	82	87	83	96	105	126	130	152	159
July	89	86	91	84	98	103	123	131	153	160
Aug.	90	87	92	86	102	111	129	132	158	160
Sept.	92	91	99	88	110	123	140	133	163	161
Oct....	92	90	93	90	112	161	179	134	167	163
Nov.	92	91	93	91	112	142	156	136 ¹¹	165	166
Dec.	94	95	99	93	134	162	174	140 ¹¹	170	167
1942 Jan....	96	100	104	95	131 ¹¹	...	...	143 ¹¹	173	171 ¹¹
Feb	96 ¹¹	101 ¹¹	106 ¹¹	95 ¹¹	...	...	...	...	...	173 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			February 1941	Current months		
	1924-29	1940	1941		December	January	February
Corn, bu.	\$.81	\$.56	\$.63	\$.54	\$.66	\$.73	\$.74
Oats, bu.	.42	.32	.36	.33	.47	.53	.53
Wheat, bu.	1.30	.81	.93	.76	1.14	1.19	1.17
Barley, bu.	.66	.46	.55	.48	.70	.73	.77
Soybeans, bu.	1.94	.82	1.24	.83	1.48	1.68	1.80
Hogs, cwt.	9.97	5.54	9.37	7.50	10.70	10.90	12.20
Beef cattle, cwt.	8.57	8.84	10.07	9.90	10.80	11.20	11.10
Lambs, cwt.	12.22	8.52	9.85	9.20	10.60	11.10	11.00
Milk cows, head	78.00	65.00	80.00	73.00	91.00	93.00	100.00
Veal calves, cwt.	11.27	9.63	11.19	11.40	12.40	13.70	13.10
Sheep, cwt.	6.52	3.44	4.43	4.20	4.80	4.95	5.30
Butterfat, lb.	.42	.27	.33	.28	.34	.34	.34
Milk, cwt.	2.32	1.67	2.05	1.75	2.50	2.50	2.40
Eggs, doz.	.30	.17	.22	.14	.32	.30	.26
Chickens, lb.	.21	.13	.15	.14	.15	.18	.18
Wool, lb.	.36	.30	.37	.33	.40	.40	.40
Apples, bu.	1.59	1.14	1.07	1.20	1.30	1.30	1.35
Hay, ton	13.88	6.68	8.49	8.20	11.40	12.00	12.50
Potatoes, bu.	1.39	.83	.82	.75	.95	1.10	1.25

¹²For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture · University of Illinois · Department of Agricultural Economics

G. L. Jordan, Editor

April, 1942

Number 83

This is your last issue of Illinois Farm Economics until your request to be kept on the mailing list is received.

THE CURRENT SITUATION¹

"Wheat. Winter wheat production this year is estimated by the Crop Reporting Board at 625 million bushels. Last year's production was 671 million bushels and the 10-year (1930-39) average production was 569 million. Spring wheat planting intentions on March 1 indicated 8.7 percent fewer acres than were planted last year and 30 percent less than the 10-year (1930-39) average. The domestic supply of wheat in the 1942-43 season (beginning next July 1) is tentatively estimated at 1,420 million bushels compared with 1,331 million in the current season. This indicated supply is 745 million bushels above estimated domestic disappearance and, since the export outlook is not promising, probably will result in a substantial further increase in carry-over at the end of the season (July 1, 1943).

"Feed grains. With an average growing season this year supplies of feed grains for 1942-43 are expected to be about 5 percent smaller than for 1941-42 and 10 to 12 percent smaller per animal unit. Disappearance of corn during the first quarter of 1942 was the largest on record. Stocks of corn April 1 were 3 percent smaller than the record April 1 stocks last year and a smaller carry-over is in prospect for next October 1.

"Hogs. Slaughter supplies of hogs during the next 6 months are expected to be about 15 percent larger than a year earlier, but lend-lease purchases of pork and lard during this period will more than offset this increase. Hence, a continued high level of hog prices is in prospect.

"Cattle. Slaughter supplies of well-finished cattle this spring and

¹Quoted from *The Demand and Price Situation*, U.S.D.A., April, 1942.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

summer may be the same as a year earlier, but supplies of all cattle are expected to continue larger than those of last year. Inspected cattle slaughter in March was the largest for the month on record.

"Lambs. Weather and feed conditions so far this spring have been mostly unfavorable for the development of the early lamb crop, and marketings before June 1 will probably be smaller than a year earlier.

"Wool. Prices of graded domestic wools advanced in March and are now at or close to the maximum prices established by the Office of Price Administration on February 28. An invitation for bids on large quantities of wool cloth and blankets for Army use, to contain not less than 50 percent of domestic wool, was an important factor in the price increase. It is estimated that mill consumption of wool for Army use in 1942 will nearly equal the average use for all purposes in recent years. Use of wool for civilians will be sharply curtailed in 1942.

"Dairy products. The announcement that the Department of Agriculture will support prices of 92 score butter at Chicago at 36 cents assures producers that butter prices throughout 1942 will be maintained above those which prevailed during most of 1941.

"Poultry products. From 6 to 10 percent more chickens and turkeys probably will be raised this year than last. Egg production in the first quarter of the year was about 16 percent larger than a year earlier. Egg production is expected to continue larger than in 1941. The relationship between feed prices and egg prices continues favorable for egg production.

"Fruits. Assuming that total fruit production in 1942 will not differ greatly from that in 1941, it is probable that the total pack of canned fruit in the 1942-43 packing season will be roughly equal in size to that of the 1941-42 season. However, the quantity available to domestic civilian consumers may be about 25-30 percent less than in 1941-42."

CURRENT PRICE CONTROL MEASURES AND PRICE PROSPECTS

Steps which have recently been taken by the President and the Office of Price Administration are designed to provide for a more effective control of prices. The importance of preventing further price inflation, both because inflation is a handicap in the wartime emergency, and because it would increase the difficulties of all groups of people during post-war readjustment, can scarcely be overestimated. However, some further rise in both the wholesale price level and in the cost of living is to be expected unless further authority is given the executive branch of the

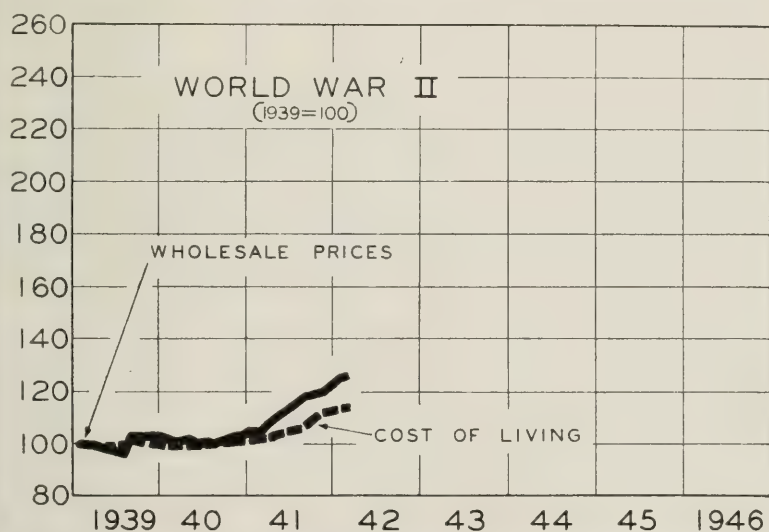
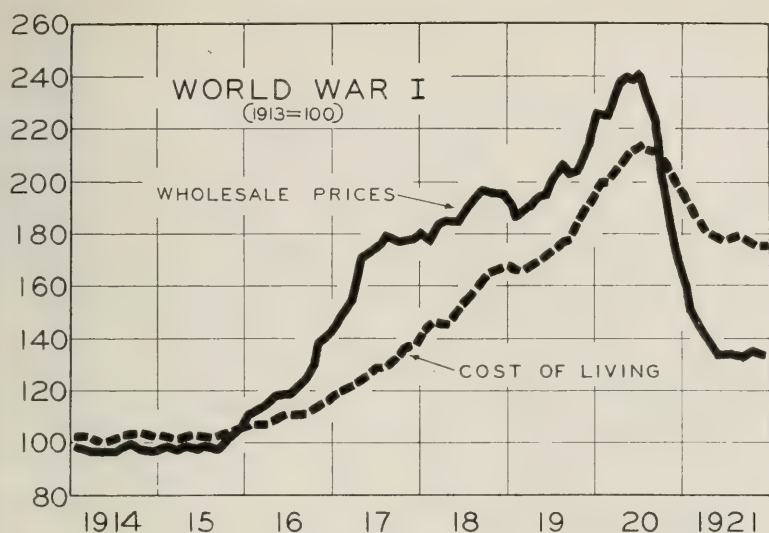


FIG. 1.—WHOLESALE PRICES AND THE COST OF LIVING IN THE UNITED STATES
WORLD WAR I AND WORLD WAR II

Government by Congress. Even if Congress grants the authority asked for by the President, it is very doubtful if further inflation will be entirely avoided, for the task is a very difficult one. There is good reason to expect, however, that the rise of prices will be less rapid during the

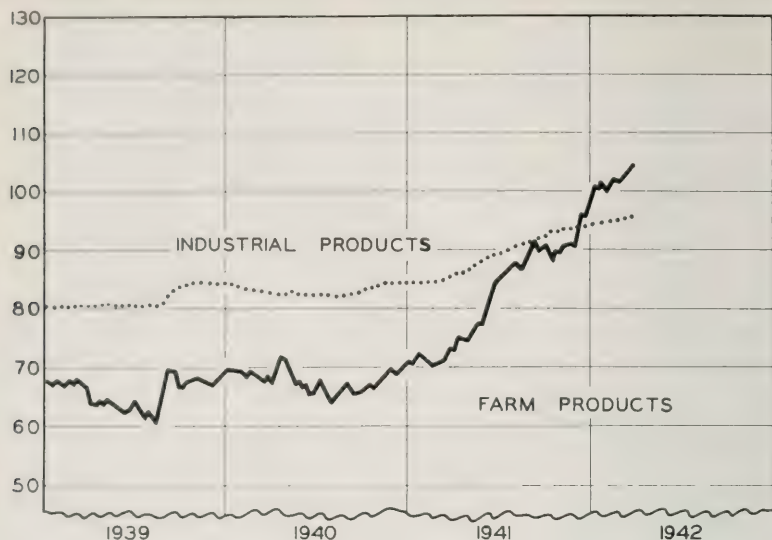


FIG. 2.—WHOLESALE PRICES OF FARM PRODUCTS AND INDUSTRIAL PRODUCTS (1926 = 100)

coming year than in the past 12 months in spite of the fact that some of the forces tending to cause inflation will be much stronger.

The course of wholesale prices and of the cost of living for the years 1914 to 1921, and for the years 1939 to date, is shown monthly by Figure 1. It will be noted that both wholesale prices and the cost of living have advanced a little less thus far during the present war than in the corresponding period of World War I. From the first half of 1939 to mid-April, 1942, the all-commodity index of wholesale prices has risen 29 percent, whereas for the first half of 1914 to April, 1917, the index rose 68 percent.

Most of the rise of prices since early 1939 has taken place since the close of 1940. This has been true of all groups of commodities, but the extent of the rise has been very different for the different groups. Thus, farm products have risen 62 percent whereas fuel and lighting materials have increased by only 7 percent. Next to farm products, the foods group (which consists mostly of processed farm products) has had the greatest increase, its rise amounting to 42 percent. The course of the index numbers of farm products and of industrial products (all commodities other than farm products and foods) is shown graphically by Figure 2. It will be noted that relative to the 1926 level (which is the base for the index numbers of this chart), farm product prices were much below those of industrial products during 1939 and 1940. By the end of 1941, how-

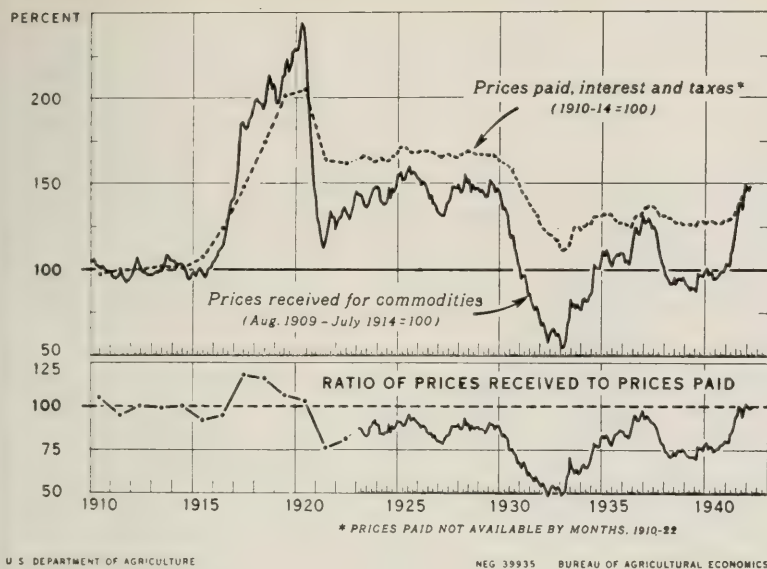


FIG. 3.—PRICES RECEIVED AND PAID BY FARMERS, INDEX NUMBERS, UNITED STATES, 1910-42

For 20 years prior to 1941 average prices received by farmers in the United States failed to reach parity (the relation to prices paid by farmers, including interest and taxes, which prevailed in 1910-14). The closest approach was in 1937 when decreased production of some commodities due to drought plus improved consumer demand carried prices to 98 percent of parity. From August 1941 through April 1942, prices have averaged 99 percent of parity, and in two of these months were slightly above parity, reflecting increased consumer demand and Government purchases connected with the war.

ever, the index of farm products' prices had risen above the other and thus far in 1942 it has continued to rise more rapidly. It is the farm products and the foods groups which seem especially likely to rise further in the near future, and this presumably is one reason for the President's request for further legislation to enable greater control over farm product prices.

The Emergency Price Control Act, which gave broad powers to the Price Administrator, specifically provided that, for agricultural commodities, no maximum price should be established below whichever is the highest of four levels: (1) 110 percent of the parity or "comparable" price; (2) the price of October 1, 1941; (3) the price prevailing December 15, 1941; or (4) the average price in the period July 1, 1919, to June, 1929. This provision applies commodity by commodity and there are differences between commodities in the height of present prices relative

to the four alternative levels. Generally speaking, however, farm product prices during April have been above their levels of October 1, 1941, and of December 15, 1941. They have been nearly as high as the 1919 to 1929 level. On the other hand, according to the price indices now being used, they have averaged about 100 percent of parity so that a further rise of about 10 percent would be permitted under the present law and with present prices paid by farmers. Furthermore, as farm product prices rise, this in itself forces a rise in the index of prices paid by farmers—partly because foodstuffs are included in the index of prices paid—and raises still further the lowest levels at which maximum prices can be established.

According to index numbers currently being used, prices received by farmers on March 15, 1942, averaged 146 percent of their 1910-14 level. This compares with 143 percent as of December 15 and 139 percent as of October 15, 1941. Since the index number of prices paid by farmers, including interest and real estate taxes, was 148 for March, 110 percent of parity for all farm products would have involved an index of 163 for prices received by farmers even if the higher farm product prices did not necessarily involve a higher index of prices paid by farmers. The course of prices received and prices paid by farmers, together with the ratio of prices received to prices paid, is shown by Figure 3 for the period 1910 to date. For the period July 1, 1919, to June 30, 1929, the average index of prices received by farmers was 152.6.

From the foregoing, it appears that if a considerable further rise in prices of farm products and foods—and hence of the cost of living—is to be prevented by direct price control measures, a change in the existing provisions of the law is necessary.

The orders issued by Price Administrator Leon Henderson on April 28, undertake to fix a maximum level on both wholesale and retail prices equal to the highest level reached for these prices in the month of March. This applies to nearly all commodities and services over which the Administrator has power to fix such a maximum level of prices. A number of agricultural products are not included in the order, and these evidently were not included because the existing law did not permit a ceiling price to be established at the March levels.

Judging from the President's message and the subsequent orders issued by the Price Administrator, it appears that in the effort to prevent further inflation, major reliance will be placed upon direct control of prices through the establishment of price ceilings. This sort of price control, while applying directly to prices, does not strike directly at the fundamental cause of rising prices. This cause may be termed an excess

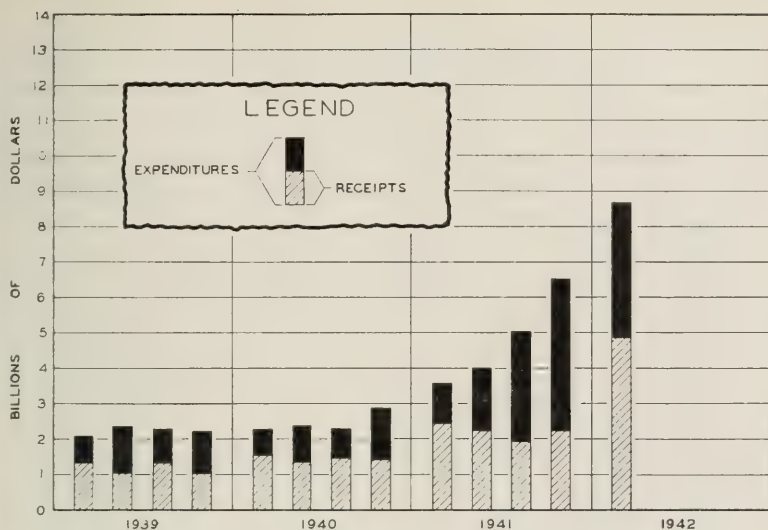


FIG. 4.—RECEIPTS AND EXPENDITURES OF FEDERAL GOVERNMENT, QUARTERLY, 1939 TO DATE

of purchasing power relative to the goods and services available. As long as such an "excess of purchasing power" exists, people are likely to try to buy more commodities and services than are available, and with prices fixed, rationing of many commodities may become necessary in order to distribute the short supplies evenly or equitably among those who wish to purchase them.

In addition to price ceilings and rationing, however, the President's program calls for increased taxation and increased encouragement of citizens to buy bonds out of their earnings. Both of these methods tend to divert purchasing power from income receivers to the Government and hence apply directly to the cause of rising prices. If all of Government expenditures were financed by such diversion of income and none were financed by commercial bank loans (or printing of fiat currency) the primary cause of wartime inflation would be cured at its source. There would then be relatively little need for direct price fixing or rationing.

The problem of financing the expenditures of the Federal Government in this war is, however, extremely great. Some idea of its magnitude may be gained from Figure 4, which shows the receipts and expenditures of the Government quarterly for the years 1939 to date.

The receipts figures shown are the so-called "net receipts" which do not include payments made under the social security employment taxes.

The expenditures shown similarly do not include expenditures from the Federal old-age and survivors insurance trust fund, although they are officially termed "total expenditures." A very great further rise of Federal expenditures is in prospect for the coming year, inasmuch as the budget calls for expenditures of about 70 billion dollars in the fiscal year, July 1942 to June 1943. This would, of course, mean quarterly expenditures of more than 17 billion dollars.

It would be very difficult, if not impossible, to obtain all this amount from taxes and purely voluntary savings of the people. In a sense, the combination of price fixing and rationing is a system of enforced savings, for if both the prices and quantities which people can purchase is limited, the amount they can spend is limited. There is nothing they can do with the remainder of their income except to save it. However, this is not what is ordinarily meant by the term enforced savings.

If, under the present program of price control, the pressure on price ceilings becomes too great or if too many commodities need to be rationed, it may be that some more direct methods of "enforced savings" will be adopted. Indeed, such methods could conceivably be used if Congress refuses to accede to the President's request for authority to fix agricultural product prices at parity levels.

One of the fundamental difficulties of direct price fixing in a democracy is that self-interest prompts some of those who have products to sell (or their representatives) to demand that prices of their products be fixed at levels which are higher than the levels which are economically desirable and in the best interests of the country as a whole. How well direct price fixing will succeed in this country remains to be seen. It is probable that it will succeed in checking the rate at which prices increase, but not in preventing some further increase in price levels.

E. J. WORKING

CONSERVING TRUCKS AND TIRES AND REDUCING HAULING COSTS OF COUNTRY MILK ROUTES

Consolidation of routes hauling milk from farms to receiving plants is desirable in order to: (1) conserve trucks and tires; (2) insure consumers of a steady milk supply; (3) insure dairy farmers of a steady market uninterrupted by breakdowns in trucks; and (4) lower trucking rates. Studies made at the University of Illinois show that by consolidating these milk routes and providing full loads, Illinois farmers selling whole milk can eliminate more than 50,000 miles of travel daily, and save as much as 5 to 10 cents per 100 pounds of milk through reduction in hauling costs.

Actual conservation of tires which took place in 1930 and 1931 in the

(Continued on page 262)

TABLE 1.—ACTUAL SAVINGS TO PRODUCERS IN THE DAYTON MILKSHED AND
POSSIBLE SAVINGS IN THE BLOOMINGTON MILKSHED BY
REVISION OF HAULING ROUTES

Factors affected by change	Direct-to-city shipments of 506 producers in the Dayton milkshed ^a			Direct-to-city shipments of 495 producers in the Bloomington, Illinois, milkshed ^b		
	Before routes were revised 1930	After routes were revised 1931	Net change	As routes were on March 1, 1942	If possible revisions were made	Net potential change
			<i>perct.</i>			<i>perct.</i>
Number of routes.....	14	9	-36	22	16	-27
Average number of farm stops per route.....	36	56	+56	22	31	+41
	<i>miles</i>	<i>miles</i>		<i>miles</i>	<i>miles</i>	
Round-trip distance in all routes	847	526	-38	1 261	845	-33
Average distance per route.....	60.5	58.4	- 3.5	47.0	52.8	+12
	<i>lbs.</i>	<i>lbs.</i>		<i>lbs.</i>	<i>lbs.</i>	
Average daily milk volume						
Per route.....	1 835	2 855	+56	2 784	4 146	+49
Per farm stop.....	51	51	0	134	134	0
Per mile per route.....	30	49	+63	59	78	+32
Average hauling costs to producers						
Per 100 pounds of milk.....	\$.40	\$.30 ^c	-25	\$.256	\$.192 ^a	-25
Per route per day.....	7.34	8.56	+17	7.12	7.970 ^a	+12
Per farm stop per day.....	.20	.15	-25	.331	.257 ^a	-22
Per mile.....	.121	.147 ^d	+21	.151	.151	0

^aData and maps from which the Dayton section of the above table was compiled were obtained thru courtesy of C. W. Lawrence, General Manager of the Miami Valley Cooperative Milk Producers Association of Dayton, Ohio.

^bData and maps for the Bloomington section of the above table were obtained in a study of this milkshed.

^cFurther reductions in hauling rates were made in the Dayton milkshed after 1931 in addition to those effected by increasing the volume per load and decreasing the total mileage.

^dThis estimate is based on an average operating cost of 5.2 cents a mile for 25 routes in the Dayton milkshed in 1934, plus an estimated return for labor. Since hauling costs differ in different areas, they should be computed separately for each area in which they are to apply.

^eCalculated on basis of actual cost per mile to producers.

SUMMARY OF SAVINGS THRU REVISION OF HAULING ROUTES

Dayton, Ohio

An *actual* rerouting program in a selected *direct-shipper* area in the Dayton milkshed, including 506 producers, resulted in:

1. Eliminating 5 of 14 hauling routes.
2. A net reduction of 38 percent in round-trip mileage.
3. A net increase of 56 percent in the average volume of milk per load.
4. A net increase of 63 percent in the average volume of milk assembled per mile.
5. A net reduction of 25 percent in the average hauling rate paid by producers.
6. A net increase of 21 percent in the average income per mile to haulers.

Bloomington, Illinois

A *possible* rerouting program in the Bloomington milkshed, including 495 producers, would result in:

1. Eliminating 6 of 22 hauling routes.
2. A net reduction of 33 percent in round-trip mileage.
3. A net increase of 49 percent in the average volume of milk per load.
4. A net increase of 32 percent in the average volume of milk assembled per mile.
5. A net reduction of 25 percent in the average hauling rate paid by producers.
6. A net increase of 12 percent in the average income to haulers.

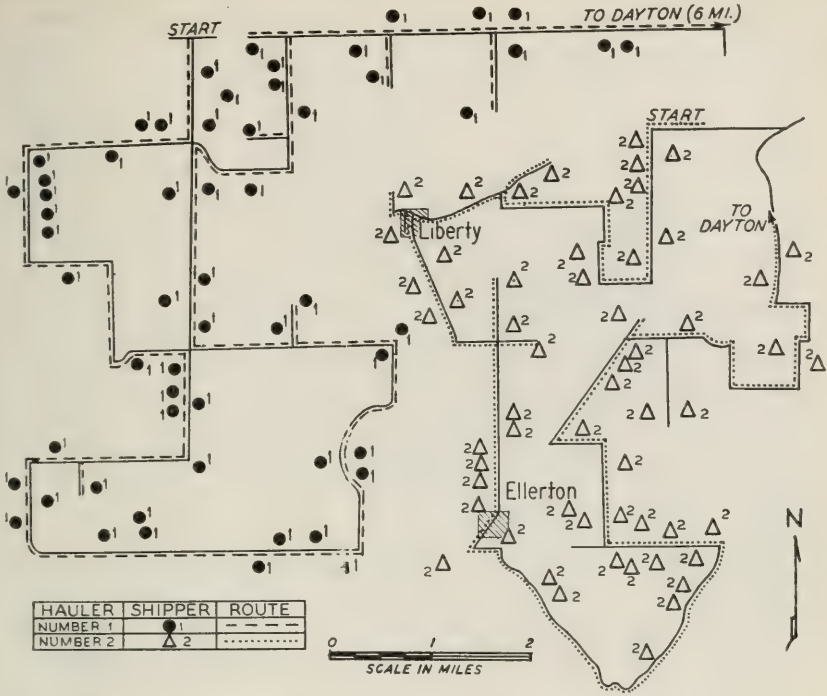


FIG. 2.—AFTER REVISION OF THE DAYTON HAULING ROUTES IN 1931

By combining into two routes the parts of the eight routes shown in Fig. 1, trucking mileage was reduced and volume of milk per load increased. In the territory now covered by Hauler 1, eight haulers formerly operated.

truck operation plus a reasonable wage to the operator. Most trucks hauling milk from farms to country plants have not kept records of operating costs. Consequently, if truck costs are to be considered in establishing the hauling rate, it is necessary to set up a schedule of costs from studies which have recorded costs until exact figures can be made available.

Studies show a considerable variation in trucking costs. When applied to the average yearly mileage of the 16 proposed routes in Bloomington, truck operating costs for 1½-ton trucks as found in specific studies were as follows:

	Cents per mile
Iowa ¹	6.82
Connecticut ²	5.40
Maine ³	4.82
Indiana ⁴	4.65

¹Computed from data in Iowa Eng. Exp. Sta. Bul. 114, May, 1933.

²U.S.D.A.-BAE Mimeo., March, 1942.

³Maine Agr. Exp. Sta. Bul. 374 (1934).

⁴Purdue Agr. Exp. Sta. Bul. 446, May, 1940.

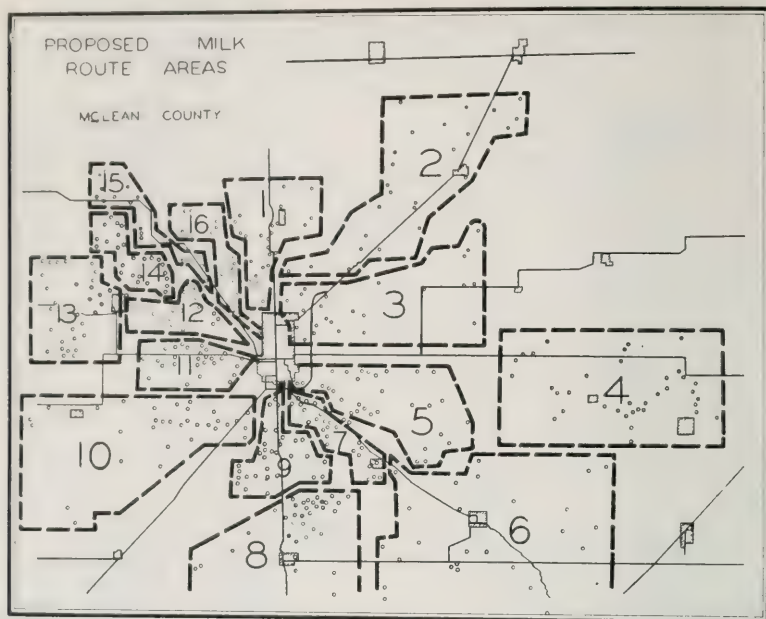


FIG. 3.—PROPOSED MILK ROUTE AREAS IN THE BLOOMINGTON MILKSHED

TABLE 2.—ESTIMATED COSTS OF TRUCK OPERATION ON PROPOSED ROUTES IN THE BLOOMINGTON MILKSHED COMPUTED ON THE IOWA COST BASIS^a

Route number	Daily round-trip mileage	Trucking costs	
		Per mile	Per day
		<i>cents</i>	
1	37.8	7.32	\$2.77
2	67.2	6.58	4.42
3	63.0	6.65	4.19
4	91.9	6.28	5.77
5	49.0	6.97	3.42
6	96.9	6.25	6.06
7	38.0	7.32	2.78
8	68.9	6.56	4.52
9	35.7	7.42	2.65
10	82.0	6.39	5.24
11	36.2	7.39	2.68
12	34.6	7.48	2.59
13	57.3	6.77	3.88
14	42.4	7.17	3.04
15	54.6	6.84	3.73
16	31.8	7.62	2.42
Average	55.4	6.82	\$3.78

^aFrom Iowa Eng. Exp. Sta. Bul. 114, May, 1933.

TABLE 3.—ESTIMATED HAULING RATES ON PROPOSED MILK ROUTES IN THE BLOOMINGTON MILKSHED BASED UPON IOWA TRUCKING COSTS^a AND VARIABLE WAGE RATES

Number of route	Hours per day	Average daily volume	Cost with labor at 55 cents per hour			Cost with labor at 60 cents per hour			Cost with labor at 65 cents per hour		
			Labor cost	Total hauling cost	Cost per cwt.	Labor cost	Total hauling cost	Cost per cwt.	Labor cost	Total hauling cost	Cost per cwt.
		<i>lbs.</i>									
1.....	5.07	3 530	\$2.79	\$ 5.56	\$.158	\$3.04	\$ 5.81	\$.165	\$3.30	\$ 6.07	\$.172
2.....	6.15	4 051	3.38	7.80	.193	3.69	8.11	.200	4.00	8.42	.208
3.....	5.83	3 665	3.21	7.40	.202	3.50	7.69	.210	3.79	7.98	.218
4.....	7.77	4 865	4.27	10.04	.206	4.66	10.43	.214	5.05	10.82	.222
5.....	5.82	4 597	3.20	6.62	.144	3.49	6.91	.150	3.78	7.20	.157
6.....	7.28	3 033	4.00	10.06	.332	4.37	10.43	.344	4.73	10.79	.356
7.....	5.52	4 219	3.04	5.82	.138	3.31	6.09	.144	3.59	6.37	.151
8.....	6.77	5 210	3.72	8.24	.158	4.06	8.58	.165	4.40	8.92	.171
9.....	5.52	4 561	3.04	5.69	.125	3.31	5.96	.131	3.59	6.24	.137
10.....	7.22	4 793	3.97	9.21	.192	4.33	9.57	.200	4.69	9.93	.207
11.....	5.00	3 676	2.75	5.43	.148	3.00	5.68	.155	3.25	5.93	.161
12.....	5.23	4 191	2.88	5.47	.131	3.14	5.73	.137	3.40	5.99	.143
13.....	6.13	4 979	3.77	7.25	.146	3.68	7.56	.152	3.98	7.86	.158
14.....	5.32	3 868	2.93	5.97	.154	3.19	6.23	.161	3.46	6.50	.168
15.....	5.42	3 243	2.98	6.71	.207	3.25	6.98	.215	3.52	7.25	.224
16.....	4.58	3 847	2.52	4.94	.128	2.75	5.17	.134	2.98	5.40	.140
Average.....	5.91	4 146	\$3.25	\$ 7.03	\$.170	\$3.55	\$ 7.33	\$.177	\$3.84	\$ 7.62	\$.184

^aSee Footnote 1, Table 2.

These costs were adjusted for mileages but not for differences in types of roads traveled. Assuming that truck costs in Bloomington were equal to those in Iowa, it was found that these costs for the 16 proposed routes ranged from \$2.42 per day for Route 16 to \$6.06 per day for Route 6 and averaged \$3.78 per day for all routes (Table 2). If truck costs were based upon data from the other studies, the daily truck cost per route would have been less.

Labor costs have been calculated using 55, 60, and 65 cents per hour. At 55 cents per hour, labor costs for the 16 proposed routes ranged from \$2.52 per day for Route 16 to \$4.27 per day for Route 4 and averaged \$3.25 per day (Table 3). Adding the labor cost (\$3.25) to \$3.78, the truck operating cost gave a total hauling cost of \$7.03 per day. Since the average volume on the proposed routes was 4,146 pounds daily, this gave an average rate of 17 cents per hundred pounds of milk. The average hauling rate with a labor rate of 60 cents per hour was 17.7 cents and with 65 cents per hour, 18.4 cents per 100 pounds. If one assumed higher labor rates, these would be computed by adding .7 cents per 100 pounds of milk for each increase of 5 cents per hour in labor cost.

TABLE 4.—COST AND RETURNS ON EXISTING COUNTRY MILK ROUTES IN THE BLOOMINGTON MILKSHED, MARCH 1, 1942

Route	Average daily volume of milk	Average rate per cwt.	Average daily income per truck	Average daily round-trip mileage	Estimated truck cost per mile*	Average daily truck operating cost	Labor return per day	Hours required per day	Labor return per hour
	lb.				cents				
A	3 313	\$.260	\$ 8.61	69.4	6.54	\$4.54	\$4.07	6.50	\$.63
B	3 972	.250	9.93	82.6	6.13	5.06	4.87	6.50	.75
C	4 865	.300	14.60	93.6	6.27	5.87	8.73	6.42	1.36
D	4 040	.263	10.63	56.1	6.80	3.81	6.82	5.42	1.26
E	3 363	.222	7.47	33.1	7.55	2.50	4.97	5.17	.96
F	2 356	.267	6.29	86.1	6.33	5.45	.84	4.83	.17
G	3 137	.250	7.84	37.5	7.35	2.76	5.08	4.83	1.05
H	3 243	.258	8.37	81.6	6.39	5.21	3.16	4.75	.67
I	3 026	.250	7.57	31.8	7.61	2.42	5.15	4.67	1.10
J	3 038	.263	7.99	47.1	7.02	3.31	4.68	4.67	1.00
K	2 375	.250	5.94	47.5	7.10	3.37	2.57	4.67	.55
L	3 797	.250	9.49	52.9	6.88	3.64	5.85	4.50	1.30
M	2 623	.250	6.56	47.8	7.00	3.35	3.21	4.42	.73
N	2 721	.250	6.80	65.2	6.60	4.30	2.50	4.33	.58
O	2 886	.250	7.22	54.3	6.84	3.71	3.51	3.92	.90
P	2 320	.254	5.89	29.7	7.75	2.31	3.58	3.92	.91
Q	1 954	.250	4.89	33.6	7.52	2.53	2.36	3.67	.64
R	2 627	.250	6.57	33.6	7.52	2.53	4.04	3.50	1.15
S	2 241	.250	5.60	30.8	7.67	2.36	3.24	3.33	.97
T	1 542	.230	3.55	22.9	8.25	1.89	1.66	2.50	.66
U	880	.250	2.20	32.8	5.39	1.77	.43	2.00	.22
V	931	.250	2.33	16.8	6.52	1.10	1.23	1.67	.74
Average....	2 784	\$.256	\$7.12	49.4 ^b	6.97	\$3.44	\$3.68	4.37	\$.84

*Computed from data in Ia. Eng. Exp. Sta. Bul. 52, 1938. In this bulletin operating costs per mile for 1½-ton trucks varied with miles traveled annually as follows: 8,000 miles, 8.36 cents; 10,000 miles, 7.86 cents; 12,000 miles, 7.55 cents; 15,000 miles, 7.21 cents; 20,000 miles, 6.83 cents; 25,000 miles, 6.57 cents; and 35,000 miles, 6.26 cents.

^bThis includes five percent more miles than shown in Table 1.

How Do Computed Costs Compare With Actual Costs?

The average rate for hauling milk in the Bloomington area on March 1, 1942, ranged from 22.2 cents per 100 pounds for Route E to 30 cents for Route C (Table 4), and averaged 25.6 cents per 100 pounds. The average income for Route C was \$14.60 per day, or more than double the average of \$7.12.

Assuming truck costs on the Iowa basis, the average cost for operating these trucks was \$3.44 per day, leaving an average labor return of \$3.68 per day. As these truckers spent, on the average, 4.37 hours per day hauling milk, they received an average labor return of 84 cents per hour.

While no definite measures have as yet been taken, it appears probable that the shortage of tires and trucks will force consolidation of trucking routes within the next few months. In view of this, it is suggested that careful consideration be given in each market to a study of this problem so that combinations of these routes can be worked out in the most efficient manner possible.

R. W. BARTLETT and R. J. MUTTI

THIS YEAR'S FARM LABOR NEEDS FORESEEN BY LOCAL FARMERS¹

If all farmers in Illinois were to have no more difficulty in obtaining help in 1942 than was anticipated in November by nearly 4000 AAA committeemen, 53 percent would have an adequate number of tractor operators; 41 percent, enough dairy hands; 30 percent, enough general farm hands; but only 16 percent would have enough harvest hands. The accelerated taking of selectees for the Army, enlistments in the armed services, and acceptance of employment in war industries have doubtless left most rural areas in Illinois with fewer farms than indicated above having adequate farm help. It seems probable that thousands of farmers this year will meet the shortage of farm help as the survey shows many to have done in 1941, namely, by larger use of family labor, purchase of additional machinery, greater exchange of work with neighbors, and increased use of custom machinery.

Fifty-nine percent of those reporting predicted a shortage of dairy farm help. In the Chicago area 84 percent predicted a shortage and in the St. Louis area, 74 percent. In some counties in the Chicago, Rock Island, Peoria, and St. Louis milksheds the percentages ranged from 80 to 97.

A deficiency of tractor operators was predicted by 47 percent of the reporters, but in the cash-grain farming type area such predictions were made by 53 to 59 percent. In a few east central Illinois counties located in the cash-grain farming type area, nearly 80 percent predicted a shortage of tractor operators.

Of 13,973 hired men employed last spring, only 44 percent were employed on the same farms in November. By November 1, 14 percent of the group had changed to other farms, 6 percent were farming for themselves, 16 percent were employed in town, 7 percent were in the U. S. Military Service, 2 percent were unemployed or on relief, and 11 percent were engaged in occupations not known to the reporters. In areas adjacent to industrial centers the movement into non-farm employment was greater than in the more rural areas of east central Illinois.

Migratory farm laborers have served the southwestern Illinois fruit and vegetable districts more than any other part of the state. Many of these migrants follow the fruit and vegetable harvests northward into Indiana, Ohio, and Michigan. A few of them serve the canning crop and small fruit areas in Vermilion and Iroquois counties.

Migratory farm labor was reported to have been used in central and

¹See *Illinois Farm Labor Survey*, by the same authors, published March 21, 1942, by the University of Illinois College of Agriculture, as mimeograph ES1294.

northern Illinois for the harvesting of small grain and corn. Most of these migrants came from the southern third of the state, but a considerable number came from adjoining states, especially Kentucky, Indiana, and Missouri. The farm hands leaving western and northwestern Illinois went largely to Iowa, Minnesota, and the Dakotas for seasonal employment.

Farm hands were attracted to Coles, Douglas, Moultrie, Shelby, and Cumberland counties for the broomcorn harvest. Most of them came from adjoining counties. In the northern three tiers of counties and in an area adjacent to St. Louis, migrants entered to help in harvesting canning crops. There will be less migratory labor in 1942 than in 1941.

There will be fewer laborers entering Illinois for farm employment in 1942 than in 1941, and less ability on the part of farms in central and northern Illinois to draw laborers from outside of their own counties. Wages offered farm hands this year as compared with a year ago, especially in central and northern Illinois, are considerably higher and doubtless may tend to sustain the inward movement of farm helpers.

Despite the anticipated shortage of farm hands, only 8 percent of the committeemen expected production to be severely curtailed in 1942, 46 percent predicted moderate curtailment, and 46 percent expected very little curtailment. The expected reductions were greatest in the Chicago and St. Louis districts, where dairy and vegetable production are important, and in the coal mining counties of southern Illinois.

Insufficient help was more of a problem in 1941 in the vicinity of the industrial centers than elsewhere. From districts surrounding Chicago, Rockford, Rock Island, St. Louis, and the heavy coal-producing counties of southern Illinois came reports that 20 percent or more of the farms lacked sufficient help for spring work. In 47 counties located mainly in the central part of the state, fewer than 10 percent of the farms reported insufficient spring help.

Near industrial areas the percentage reporting a deficiency of help for livestock operations was two to three times the state average of 7 percent.

Adjustments Illinois farmers have made. In general, farm operations in 1941 were not severely handicapped by insufficient help. Field operations were carried out in a timely manner in most parts of the state until excessive fall rains occurred in late September. Crop losses due to labor shortage were small, and livestock production did not suffer seriously.

In 1941, 26 percent of the farms hired less help, 56 percent hired about the same amount, and 18 percent hired more help than they did in 1940. The reports were made for 15,079 farms.

TABLE 1.—NUMBER OF FARMS HIRING LABOR AND THE KINDS OF LABOR HIRED IN ILLINOIS IN 1941

	1940		1941	
	Number	Percent	Number	Percent
Hiring no labor.....*	5,947	30	4,596	24
Hiring only seasonal labor ^a.....	..	..	9,205	47
Hiring only year-around help ^a.....	..	..	2,410	12
Hiring both seasonal and year-around help ^a.....	..	..	3,228	17
Hiring some labor.....	13,472	70	14,843	76

*Not ascertained for 1940.

The proportion hiring more help in 1941 than in 1940 was highest in the mixed farming area and in the grain and livestock area of southeastern Illinois where an increase was reported for nearly 30 percent of the farms. In those areas, farms are small and the rural population is large, and many farmers have not ordinarily hired farm labor, but military service and industrial employment made it necessary in 1941.

On the 26 percent of the farms hiring less help, several methods were used to adjust operations. They were: (1) increase in family labor on 38 percent of the farms, (2) purchase of additional machinery on 36 percent, (3) greater exchange of work with neighbors by 33 percent of the farmers, and (4) increase in use of custom machinery on 30 percent.

On the other hand, 14 percent of the farmers reduced the scale of their operations and 19 percent lowered the quality of their work. In many cases several of these adjustments were reported for the same farm.

In 19 of the 34 counties in the southern third of the state, the proportion of farm operators hiring no labor in 1940 was from 35 to 57 percent; in 1941, the number of these same counties reporting over 35 percent of the operators as hiring no labor was reduced to only 9 counties. For all other parts of the state, the percent hiring no labor was considerably less in 1941 than in 1940.

Seasonal workers make up a higher proportion of farm laborers in the southern third of the state than elsewhere. In nearly all counties, 70 percent or more of the farms hired only seasonal workers. Year-around help was used most extensively in the dairy and mixed livestock farming-type areas of northern Illinois. Farms hiring both seasonal and year-around help were most common in the Chicago district, in the livestock and grain and the general farming-type areas of western Illinois.

Does the need for recruiting farm laborers warrant new steps? Present plans for a farm labor placement service in Illinois call for 80 placement officers, so located that every county of the state will be

served either on a full-time or part-time basis. Cooperative relations between the U. S. Employment Service, the Extension Service, the W.P.A., the U.S.D.A. war boards, the schools, and other local agencies are expected to expedite the recruiting and placing of farm workers.

As seasonal operations are completed in different areas, the farm placement service can be of material assistance in directing the workers to other localities where their services are needed. If the farm labor shortage becomes very acute, this service will be able to cooperate with similar offices in areas of surplus farm population to facilitate movements of workers to deficit labor areas. Such a movement has long been operating to some degree in a natural manner.

Every farmer in every community will expect to utilize his family labor resources more fully, to increase the capacity of his machinery by keeping it in good repair, and to exchange work with his neighbors so that production will be increased.

In many places the school term is being shortened so that boys and girls will be available for farm work earlier in the spring. Similar arrangements will no doubt be made for fall harvest work, as that seems to be the more critical period.

Since the greatest good is likely to come from local efforts, it would seem advisable to explore the possibility of using farm workers from nearby urban areas, especially the smaller cities and towns. In some cases a high proportion of the inhabitants have a farm background and could easily work for limited periods (2 or 3 half days a week) at operations adapted to their physical capabilities and their experience and training. Some persons, such as automobile and tire salesmen, who have been in occupations restricted by the war, have already taken farm employment.

Recent regulations applied in the Selective Service System relative to deferment of essential farm workers will doubtless help to alleviate the farm labor situation.

While it was pointed out that 27 percent of 15,000 farms reported less hired help in 1941 than in 1940, it is emphasized that there were numerous farms (31 percent in 1940 and 24 percent in 1941) that hired no help. Unless weather conditions of the 1942 season are very unfavorable at the time of harvesting, it is possible that approximately one-third of the farm operators will not want hired help in 1942. However, if family members are taken into the armed service or are attracted to civilian employment in industrial areas, the percentage of operators looking for hired help will be increased.

Readers should not assume from the fact that there is widespread discussion of farm labor problems that a labor shortage actually exists or

that all communities have been suddenly drained of labor reserves. In fact, the number of laborers going into the military service or into war industries will probably not reach its peak until well into 1942.

It is important that farms with high productive capacity have first consideration in any program for the distribution of labor, power, and equipment in order to safeguard them from shortages at critical seasons of the year.

V. B. FIELDER, D. M. HALL, W. H. SCOFIELD, and C. L. STEWART

Have you sent in your request to be kept on
the Illinois Farm Economics mailing list?

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk
Director, Extension Service in
Agriculture and Home Economics

FREE—Co-operative Agricultural Extension
Work. Acts of May 8 and June 30, 1911

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period.....	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929.....	95	105	104	99	103	103	104	110	110	110
1930.....	86	88	89	94	83	87	93	100	89	91
1931.....	73	65	62	80	58	58	72	84	68	75
1932.....	65	48	41	69	43	43	62	66	47	58
1933.....	66	51	45	71	49	51	72	62	50	69
1934.....	75	65	61	80	57	55	69	72	64	75
1935.....	80	79	82	81	64	65	80	78	74	87
1936.....	81	81	86	80	74	82	103	89	86	103
1937.....	86	86	96	84	80	87	103	98	102	113
1938.....	79	69	69	80	72	81	101	92	78	89
1939.....	77	65	65	78	72	81	97	99	92	108
1940.....	78	68	69	79	78	90	113	106	105	123
1941.....	87	82	87	85	101	116	136	129	149	155
1941 Mar.....	82	72	76	80	88	94	118	121	131	147
Apr.....	83	74	82	80	93	100	125	122	135	144
May.....	85	76	83	81	97	108	133	127	144	154
June.....	87	82	87	83	96	105	126	130	152	159
July.....	89	86	91	84	98	103	123	131	153	160
Aug.....	90	87	92	86	102	111	129	135	158	160
Sept.....	92	91	99	88	110	123	140	134	163	161
Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	135	165	166
Dec.....	94	95	99	92	134	162	176	139	170	167
1942 Jan.....	96	100	104	94	132	145	153	143	174	171
Feb.....	97	101	106	95	126 ¹¹				177	173
Mar.....	97 ¹¹	103 ¹¹	110	95						174 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹¹

Product	Calendar year average			March 1941	Current months		
	1924-29	1940	1941		January	February	March
Corn, bu.	\$.81	\$.56	\$.63	\$.56	\$.73	\$.74	\$.75
Oats, bu.	.42	.32	.36	.34	.53	.53	.52
Wheat, bu.	1.30	.81	.93	.79	1.19	1.17	1.17
Barley, bu.	.66	.46	.55	.48	.73	.77	.75
Soybeans, bu....	1.94	.82	1.24	.89	1.68	1.80	1.79
Hogs, cwt.	9.97	5.54	9.37	7.40	10.90	12.20	12.80
Beef cattle, cwt..	8.57	8.84	10.07	9.60	11.20	11.10	11.30
Lambs, cwt.	12.22	8.52	9.85	9.40	11.10	11.00	10.80
Milk, cows, head	78.00	65.00	80.00	72.00	93.00	100.00	99.00
Veal calves, cwt.	11.27	9.63	11.19	10.50	13.70	13.10	13.30
Sheep, cwt.	6.52	3.44	4.43	4.70	4.95	5.30	5.60
Butterfat, lb.	.42	.27	.33	.29	.34	.34	.34
Milk, cwt.	2.32	1.67	2.05	1.75	2.50	2.40	2.30
Eggs, doz.	.40	.17	.22	.15	.30	.26	.25
Chickens, lb.	.21	.13	.15	.14	.18	.18	.18
Wool, lb.	.36	.30	.37	.33	.40	.40	.40
Apples, bu.	1.59	1.14	1.07	1.25	1.30	1.35	1.65
Pears, ton	13.88	6.68	8.49	8.00	12.00	12.50	12.70
Potatoes, bu.	1.39	.83	.82	.75	1.10	1.25	1.25

¹¹For sources of data in tables see previous page.

Co-operative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture co-operating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture · University of Illinois · Department of Agricultural Economics

G. L. Jordan, Editor

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THE CURRENT SITUATION¹

Wheat. A winter wheat crop of 646.9 million bushels was indicated by the official crop report of May 11, which compares with 625.0 million bushels indicated a month earlier. This is 3.6 percent below the 671.3 million bushels produced last year, but 13.6 percent above the 1930-39 average of 569.4 million bushels. Favorable prospects reflect the excellent condition of the crop. If the winter crop turns out as indicated, and if spring wheat acreage should turn out to be as indicated by prospective plantings reports, and yields per acre should be about average, the new crop would total about 810 million bushels. With a prospective carry-over of about 630 million bushels, total supplies would approximate 1,440 million bushels. The total in 1941-42 was 1,331 million bushels, consisting of a carry-over of 385 million bushels and a crop of 946 million bushels.

Sales of wheat up to May 2, under the program in which sales are made at prices fairly comparable to corn values, totaled 28 million bushels, while sales for alcohol production totaled less than 1 million bushels.

Fats, oils, and oilseeds. Demand for fats and oils is expected to show further improvement during 1942, and with prices for most items restricted by orders of the Office of Price Administration, the monthly rate of actual consumption of fats and oils probably will be increased unless restricted by Government action.

Production of fats and oils from domestic materials in 1942 is likely to be about 1 billion pounds greater than in 1941, but imports of fats, oils, and oilseeds in terms of oil, which in recent years have varied from 1.5 to 2.5 billion pounds annually, may be only half as large as they were in 1941. And with mounting lend-lease requirements, factory stocks of primary fats and oils are likely to be materially reduced in 1942.

Prices of linseed oil and butter, which are not restricted by ceilings, were considerably higher in April than in March, but the price of butter has since declined to some extent. Prices of fats and oils generally are not expected to change materially in the next few months.

Feeds. Maximum price regulations for all important by-product

¹Quoted from *The Demand and Price Situation*, U.S.D.A., May, 1942.

feedstuffs, except linseed cake and meal, along with other commodities, were included in the general price order. Feed grains, ground or whole, and mixed feeds also are exempt. This regulation does not apply to meat scraps, digester tankage, or fish meal, since the prices of these feeds are regulated by special schedules previously announced. Prices of tankage, meat scraps, fish meal, and wheat millfeeds are at about ceiling levels, while most other feeds are considerably below the ceilings.

Hogs. The outlook for hog prices this summer is the most favorable in a number of years. Slaughter supplies of hogs in the 5 months May-September are expected to total 15 to 20 percent greater than a year earlier, but the effect of this increase on prices will be more than offset by the strong consumer demand conditions, military needs and large lend-lease requirements for pork and lard. Hog prices at Chicago in recent weeks have averaged around \$14.00 per 100 pounds, with prices for heavy hogs above their usual relationship to prices of light and medium weight hogs. This level of prices for live hogs appears to be about the highest that can be expected under prevailing ceiling prices for pork and lard. Hog prices are not likely to decline much from this level for the next several months, probably not before next fall when the market movement of the record large 1942 spring pig crop gets under way in volume.

Cattle. Cattle prices weakened in late April and early May, following the announcement of the general maximum price regulation order, establishing wholesale and retail price ceilings for beef. No ceilings were placed on prices of live cattle, but since prices of both beef and cattle were higher in April than in March, the order had a depressing effect upon the prices of most classes and grades of cattle.

Reduced supplies of pork for domestic consumption, as a result of lend-lease purchases, and the strong civilian and military demand for meats will be important factors tending to offset the effect of the large supplies upon prices of fed cattle this year.

Wool. Prices of graded domestic wools at Boston were unchanged in April and the early part of May. Scoured basis prices for most wools are close to the maximum prices permitted for shorn wools under Office of Price Administration price regulations. Demand for wool at Boston was good in April with mills purchasing wool to cover large army orders for wool cloth and blankets.

Dairy products. Under the recent over-all price control regulation, maximum prices of fluid milk and cream at retail and of ice cream at wholesale and retail were fixed at the highest level reached during March 1942. Retail sales by a farmer of milk, cream, and ice cream produced

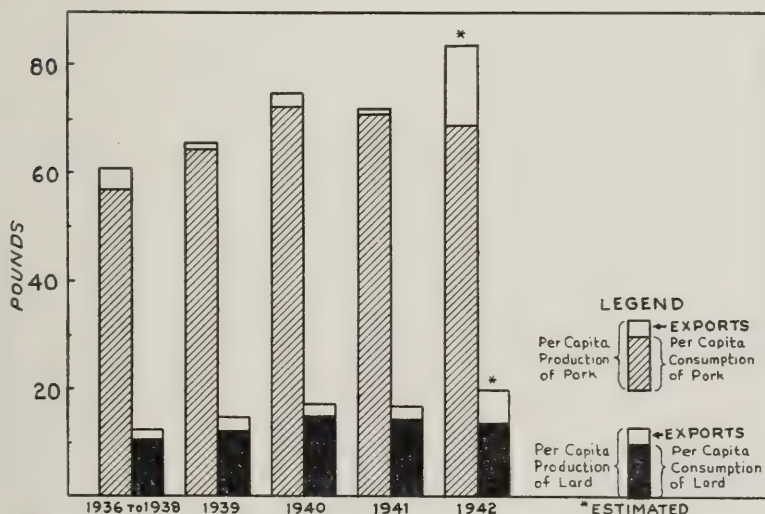
and processed on his own farm are excluded if the value of such sales does not exceed \$75 in any one calendar month. No maximum prices have been fixed for wholesale prices of milk for fluid use or for retail or wholesale prices of manufactured dairy products.

Poultry products. Egg output in April—the seasonal peak for the year—was 17 percent larger than in April 1941. The favorable relationship between feed prices and egg prices is encouraging farmers to delay marketing their old hens and to feed better than usual.

Hatchery production of baby chicks in April was about 19 percent larger than in April last year, and the output in the first 4 months was about 19 percent larger than a year earlier. Comparable increases over last year probably will not be so marked in coming months, but it is likely that farmers will raise at least from 6 to 10 percent more chickens and turkeys this year. Despite the large supply, prices received by farmers for chickens and turkeys may average higher in 1942 than last year because of the prospective stronger demand for all meats.

HOG PRODUCTION AND EXPORTS INCREASE

Hog production this year is the largest on record. Ceilings have been placed on prices of pork products. Lend-lease purchases of pork and lard have been increased sharply. What do these facts mean in terms of



PER CAPITA PRODUCTION AND CONSUMPTION OF PORK AND LARD, U.S., 1936-1942

TABLE 1.—SIZE OF PIG CROPS AND HOG SLAUGHTER, 1936 TO 1942

Million head

Year beginning October 1	Pig crop			Calendar year	Number of hogs slaughtered
	Fall	Spring	Total		
Average (1935 to 1937).....	23.8	41.1	64.9	Average (1936 to 1938)	57.5
1938.....	28.6	53.2	81.8	1939.....	66.2
1939.....	33.7	49.6	83.3	1940.....	77.3
1940.....	30.3	49.4	79.7	1941.....	72.5
1941.....	35.6	62.0 ^a	97.6 ^a	1942.....	85 to 87 ^a

^aExpected. The expected slaughter of 85 to 87 million head is larger than the 1942 goal by 2 to 4 million head.

price prospects and domestic consumption? Some indications are presented to help in understanding the hog situation in 1942.

Hog marketings during the remainder of 1942 will reflect the size of the pig crops last fall and this spring. The fall pig crop of 1941 totaled 35.6 million pigs, 18 percent larger than the 1940 fall crop. It was the largest fall pig crop on record, being 50 percent larger than the average of the three years, 1935 to 1937, during which period hog production was at a very low level. The number of pigs farrowed this spring is expected to total about 62 million. This is nearly 26 percent larger than the number farrowed last spring, and is also about 50 percent larger than the average of the three years, 1936 to 1938.

The fall crop of 1941, plus the spring crop of 1942, will be about 17.9 million head larger than the preceding spring and fall crops (Table 1). This increase will be large enough to use an additional 325 million bushels of corn, or about one-half of the corn carry-over of October 1, 1941.

As a result of these record pig crops, we can expect hog marketings and supplies of pork and lard to be at record levels during the rest of this year. Production goals called for 83 million hogs to be slaughtered during 1942, but it seems likely that the goal will be exceeded by from 2 to 4

TABLE 2. TOTAL AND PER CAPITA PRODUCTION OF PORK AND LARD, 1936 TO 1938

Calendar year	Pork production		Lard production	
	Total (billion pounds)	Per capita (pounds)	Total (billion pounds)	Per capita (pounds)
Average (1936 to 1938)	7.4	60.6	1.6	12.4
1939	8.6	65.8	2.0	15.3
1940	9.9	75.2	2.3	17.4
1941	9.6	72.0	2.3	17.3
1942 ^a	11.2 to 11.5	84.0	2.7 to 2.8	20.0

^aEstimated on basis of 132 pounds of pork and 32 pounds of lard per hog slaughtered.

TABLE 3.—EXPORTS OF PORK AND LARD, PURCHASES BY THE AGRICULTURAL MARKETING ADMINISTRATION, AND HOG EQUIVALENTS OF EXPORTS AND PURCHASES, 1936 TO 1942

Calendar year	Exports (Million pounds)		Purchases by A.M.A. (Million pounds)		Estimated hog equivalent ^a			
					Exports (Million head)		Purchases (Million head)	
	Pork	Lard	Pork	Lard	Pork	Lard	Pork	Lard
Average (1936 to 1938)	75.6	151.2	.....	.....	.6	4.5	.....	.....
1939	129.5	277.3	.....	.....	1.0	8.7	.....	.....
1940	93.9	201.3	.....	.....	.7	6.3	.....	.....
1941	247.0 ^b	430.0 ^b	473.0	326.2	1.9	13.4	3.6	10.2
1942	.....	.....	1 960.0 ^c	850.0 ^c	.....	.....	14.8	26.5

^aEstimates based on 132 pounds of pork and 32 pounds of lard produced per hog.

^bEstimates based on January to September figures.

^cEstimated as follows: Actual purchases, January to March; plus 40 percent of estimated federally inspected pork and 66 percent of estimated federally inspected lard, April to September; plus 20 percent of estimated federally inspected pork and 33 percent of estimated federally inspected lard, October to December.

million hogs. Total slaughter will thus be about 17 percent greater than in 1941. Current marketings are approximately 15 percent greater than in the same period of 1941. In terms of pork production, this means more than 11 billion pounds, or about 84 pounds per person (Table 2). In 1941, per capita production of pork was 72 pounds; in 1940, 75 pounds; and as an average of 1936 to 1938, about 61 pounds. Lard production has also reached a peak, about 2.70 billion pounds or 20 pounds per capita. This compares with a per capita production of 17.3 pounds in 1941, 17.4 in 1940, and 12.4 pounds as an average for the period 1936 to 1938.

Not all of this high production will be consumed within this country. Part of this increased production is needed to ship under lend-lease arrangements to our allies. No figures on exports have been published since September, 1941, but estimated exports for 1941 include the pork from nearly 2 million hogs, and the lard from more than 13 million hogs (Table 3). These were tremendous increases over preceding years.

Purchases of pork and lard for lend-lease purposes are made by the Agricultural Marketing Administration. Early in April of this year, this agency "issued a request to packers operating under federal inspection to offer for sale to the Department of Agriculture at least two-fifths of their production of pork cuts and canned pork, and two-thirds of their production of lard."¹ This level of government purchase is expected to be maintained for six months. Based on these indications, purchases by the Government in 1942 may include the pork from nearly 15 million hogs, and the lard from 26.5 million hogs.

¹From "The Livestock Situation," April, 1942.

TABLE 4.—TOTAL AND PER CAPITA CONSUMPTION OF PORK AND LARD, 1936 TO 1942

Calendar year	Total consumption (Billion pounds)		Per capita consumption (Pounds)	
	Pork	Lard	Pork	Lard
Average (1936 to 1938)	7.3	1.4	56.6	10.9
1939	8.4	1.6	64.4	12.4
1940	9.6	1.9	72.5	14.7
1941 ^a	9.5	2.0	71.4	14.5
1942 ^b	9.2	1.8	69.0	13.8

^aPreliminary.^bEstimated by the authors.

Domestic consumption is limited by the amount available after exports are deducted from production. During 1940 and 1941, consumption of pork and lard were at high levels. In 1940, 72.5 pounds of pork, and in 1941, 71.4 pounds, were consumed per person (Table 4). In 1939, per capita consumption was about 11 percent less at 64.4 pounds; and from 1936 to 1938, per capita consumption was about 22 percent less at 56.6 pounds. Per capita consumption of pork in 1942 is expected to be about 69 pounds.

Per capita consumption of lard was also low from 1936 to 1938 at 10.9 pounds. It reached a peak of 14.7 pounds in 1940, and 14.5 pounds in 1941. The per capita consumption of lard in 1942 will be about 12 to 14 pounds which is lower than the 1940 and 1941 levels, but higher than the previous years.

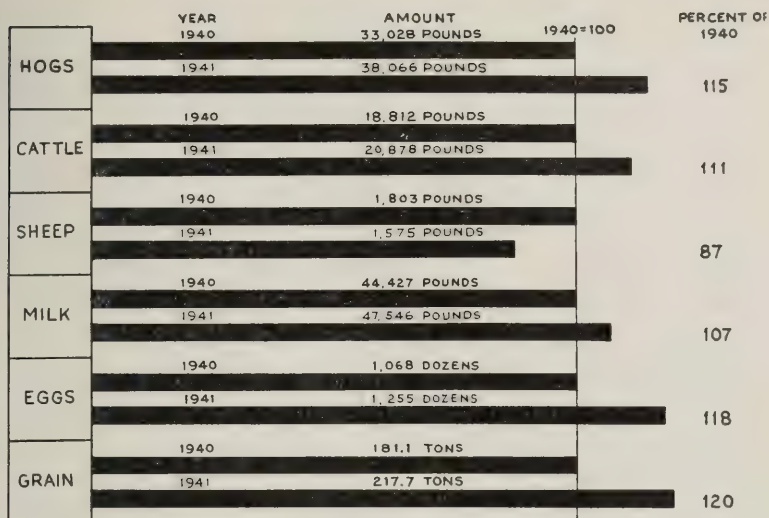
The present ceiling on prices of pork products allows the price of hogs to be about \$14.00 per hundredweight. With low packer costs on the large government orders, and with the Government paying premiums for the processed pork products, competition for hogs will be keen. High consumer incomes and the Government purchases will maintain pork and lard prices near their ceiling levels.

The record production of hogs and the high prices prevailing will assure a large farm income from hogs. Enormous supplies are being sent to our allies, and yet supplies available for domestic consumption will be relatively large.

P. E. JOHNSTON and A. H. HARRINGTON

CORN-BELT FARMERS INCREASE PRODUCTION

The splendid response of Farm Bureau Farm Management Service cooperators to the defense program request of April, 1941, that corn-belt farmers increase their production of pork, milk, and eggs is shown by the



PRODUCTION PER FARM OF HOGS, CATTLE, SHEEP, MILK, EGGS AND GRAIN ON FARM BUREAU FARM MANAGEMENT SERVICE FARMS. (635 FARMS IN 1940 AND 600 OF THE SAME FARMS IN 1941.)

increased production of these products in 1941 over that on these same farms in 1940.¹ Parts of the increases on these farms were due to the superior management of Farm Bureau Farm Management Service co-operators. Weather conditions also were more favorable for crop production in 1941 than in 1940, and part of the increased production of livestock products was due to the farmers' response to higher prices.

Hogs. The 1941 average production of 38,066 pounds of live weight of hogs per farm was 5,038 pounds, 15 percent more than the average production of 33,028 pounds in 1940 (Table 1 and Fig. 1). A 33-percent increase in the number of fall pigs raised per farm in 1941 over the number raised in 1940 accounted for much of the increased weight of pork produced (Table 2). An increase from 6.2 to 6.5 pigs weaned per litter in both spring and fall litters and an increase of 5 pounds per head in the weight of all hogs marketed accounted for some of the average farm increase of 5,038 pounds of pork produced.

Cattle and sheep. The average production of live weight of cattle

¹The data used in this article were taken from records kept by 635 cooperators in the Farm Bureau Farm Management Service in 1940 and by 600 of the same cooperators in 1941. The farms are located in 22 counties in north-central and western Illinois.

TABLE 1.—PRODUCTION OF HOGS, CATTLE, SHEEP, MILK, EGGS, AND GRAIN ON FARM BUREAU FARM MANAGEMENT SERVICE FARMS IN 1940 AND 1941

Product	Average amounts produced per farm		Increase per farm in 1941 over 1940	
	1940	1941	Amount	Percentage
Hogs, pounds.....	33,028	38,066	5,038	15
Cattle, pounds.....	18,812	20,878	2,066	11
Sheep, pounds.....	1,803	1,575	228 ^a	13 ^a
All livestock, pounds.....	53,643	60,519	6,876	13
Milk, pounds.....	44,427	47,546	3,119	7
Eggs, dozens.....	1,068	1,255	187	18
Grain, tons.....	181.1	217.7	36.6	20

^aDecrease.

was 18,812 pounds on the Farm Bureau Farm Management Service farms in 1940, and 20,878 pounds in 1941. This represented an increase of 2,066 pounds, or 11 percent, per farm.

The production of mutton and wool decreased from 1,803 pounds per farm in 1940 to 1,575 pounds per farm in 1941. This amounted to a decrease of 13 percent.

Milk. In response to the defense program request for greater milk production and in response to higher prices all Farm Bureau Farm Management farms on which records were kept increased their production of milk and milk products from 44,427 pounds per farm in 1940 to 47,546 pounds in 1941. While milk production is not very important in the area in which these farms are located, there was a 7-percent average increase of 3,119 pounds of milk produced per farm. This 7-percent increase in milk production was evidently due to a small increase in the number of cows milked per farm and to an increase in the amount of milk produced per cow.

Eggs. Egg production per farm was increased from 1,068 dozen in

TABLE 2.—POUNDS OF PORK PRODUCED PER FARM; AVERAGE NUMBER OF FALL PIGS RAISED PER FARM; AVERAGE NUMBER OF PIGS RAISED PER LITTER, BOTH SPRING AND FALL; AND AVERAGE WEIGHT OF HOGS SOLD, IN 1940 AND 1941

Item	1940	1941	Increases	
			Amount	Percentage
Pounds of pork produced.....	33,028	38,066	5,038	15
Number of fall pigs raised.....	47.7	63.5	15.8	33
Number of pigs weaned per litter.....	6.2	6.5	.3	5
Weight of hogs sold.....	249	254	5.0	2

TABLE 3.—DOZENS OF EGGS PRODUCED PER FARM, AVERAGE NUMBER OF HENS KEPT THROUGHOUT THE YEAR, AND AVERAGE NUMBER OF EGGS PRODUCED PER HEN ON FARMS ON WHICH DAILY EGG-PRODUCTION RECORDS WERE KEPT IN 1940 AND 1941

Item	1940	1941	Increases	
			Amount	Percentage
Dozens of eggs produced.....	1,677	1,930	253	15
Average number of hens per flock.....	148	162	14	9
Average number of eggs per hen.....	136	143	7	5

1940 to 1,255 dozen in 1941 on all farms on which records were kept. This increase of 187 dozen eggs per farm meant that production had been stepped up 18 percent. The increase in the production of eggs on about 250 farms on which complete daily egg-production records were kept was 15 percent (Table 3). The increase on the latter farms was evidently due to an increase of 9 percent in the average number of hens kept and an increase of 5 percent in the number of eggs produced per hen.

Grain. The 20-percent increase in the tons of grain produced per farm in 1941 over 1940 was largely due to 1941 weather conditions which favored the growth of corn and soybeans. Yields per acre for the years of 1940 and 1941 were: corn, 56.1 and 73.3; oats, 61.4 and 48.8; wheat, 27.8 and 22.6; soybeans, 21.6 and 26.8. The total tons of grain produced per farm were 181.1 in 1940 and 217.7 in 1941 (Table 4). While most of the increased yields of grain in 1941 were doubtless due to favorable weather conditions as far as corn and soybeans were concerned, some of the increase, especially that in corn, was evidently a result of the fact

TABLE 4.—TONS OF GRAIN PRODUCED PER FARM IN 1940 AND 1941 AND ACREAGES OF LEGUMES GROWN AND AMOUNTS OF LIVESTOCK FED DURING THE TWO PRECEDING YEARS

Item	1940	1941	Increases	
			Amount	Percentage
Tons of grain produced.....	181.1	217.7	36.6	20
Average number of acres of legumes grown per 100 acres of tillable land during two preceding years ^a	21.3	25.8	4.5	21
Average weight of livestock produced during two preceding years.....	48,728	52,662	3,934	8

^aThe legumes included were alfalfa, sweet, red, alsike, and mammoth clover which occupied the land during the crop season and sweet clover plowed under at the end of the first year.

that more soil-building legumes were grown in 1939 and 1940 than in 1938 and 1939.

Alfalfa, sweet, red, alsike, and mammoth clover, or sweet clover which was plowed under at the end of the first year, occupied an average of 21.3 acres of each 100 acres of tillable land during 1938 and 1939. These legumes exerted a definite influence on the crop yields in 1940. The same legumes occupied an average of 25.8 acres of each 100 acres of tillable land in 1939 and 1940 and affected the yields in 1941. Thus, 21 percent more grain crops were grown in 1941 than in 1940 on land which had received the benefits of soil-building legumes during the two preceding years. The larger yields of grain grown in 1941 over that of 1940 were doubtless due in part to the 8 percent more livestock produced in 1939 and 1940 than in 1938 and 1939. It is probable that high-yielding and well-adapted seeds were used more in 1941 than in 1940.

It is evident from this study of the 1940 and 1941 farm records that these corn-belt farmers, by adopting more efficient crop- and livestock-production practices, were able to accomplish the increased production of farm products which defense officials had requested for 1941.

M. L. MOSHER

DEVELOPMENTS IN CONNECTION WITH THE TRANSPORTATION OF ILLINOIS GRAIN

Some special problems now facing farmers and the grain trade in the transporting of Illinois grain crops are: (1) increasing difficulty in motor transportation; (2) congestion of storage space in elevators, caused by huge wheat carryovers, which may make necessary a "permit" system for moving grain to primary markets in order to prevent tying up of freight cars for lack of a place to unload them; (3) diversion of shipping used for handling grain on the Great Lakes to the iron ore trade. The second development will make more farm storage necessary. The shorter crop of wheat in 1942 in Illinois, together with the likelihood of a strong mill demand for soft wheat will tend to lessen the seriousness of this problem in Illinois. But the farm storage problem may become particularly acute next fall when the larger crop of soybeans is marketed. Likewise, shortage of elevator space in our terminal markets, and the slower movement because of the reduction in lake shipping will likely cause cash grain to sell at sharp discounts in these markets, as has been the case at times during the past year. This situation also makes adequate farm storage desirable.

However, the development most likely to cause difficulty will be the growing shortage of truck transportation. Trucks hauling farm products are now given favorable rationing for tires and tubes. But the tightness of the rubber situation in view of the large needs for military uses and the practical inability to get significantly large supplies of new rubber will make it necessary to put into use measures for economizing in the use of trucks. Also, replacements of new trucks will be much less than normal. It is likely that farm communities may shortly face some such questions as these: How can a 25 percent reduction be effected in the use of truck transportation? Can this be done and still get crops and supplies moved?

The use of trucks in hauling grain cannot, of course, be considered independent of other uses. Trucks hauling grain may also haul livestock, limestone, feedstuffs, and other farm supplies. All such hauling may be classified into three classes in the order of essentialness: (1) strictly local assembling to rail shipping points, or to local consuming markets, or hauling of supplies. To substitute horse-drawn equipment would greatly increase the human labor required in marketing; (2) concentration point assembling for shipment by rail or for processing, or hauls to more remote consuming areas. This might include hauls up to 50 or 60 miles, and would include some hauling into central markets; (3) longer-range hauling to central markets, or to remote consuming centers. The latter can be most readily replaced because railroads are available for such hauling. If any substantial economies are to be effected in truck mileage, it must be in connection with these longer hauls. For example, 5,000,000 bushels of grain and soybeans were delivered to Chicago elevators by truck in 1941. If the average distance was 50 miles, this would be equivalent in truck use to the hauling of 62.5 million bushels of grain into local elevators for an average distance of four miles.

The bulk of the grain marketed in Illinois involves hauling of the Class 1 type,* as described above. Hauls to elevators on the Illinois and Mississippi Rivers, to Chicago, Peoria, and St. Louis, to consuming (feeding) areas, to local soybean mills, may be included in Class 2. Some hauling to St. Louis, to markets on the Ohio River, and to more remote feeding areas (usually as back-hauls), may be put in Class 3.

Only approximations can be made of the quantities of grain hauled different distances. The following figures are only rough estimates, intended merely to illustrate the mileage involved in different categories. It is estimated that approximately 270 bushels of grain and soybeans were marketed from Illinois farms in 1941.

	Bushels (million)	Average distance (miles)	Bushel miles (million)	Truck miles (million) ¹
<i>Class 3 hauls:</i>				
(a) To feeding areas, St. Louis and Ohio River markets.....	1	150	150	.75
<i>Class 2 hauls:</i>				
(a) To elevators on Illinois and Mississippi Rivers ²	25	25	625	3.125
(b) To Chicago, St. Louis, and other primary markets ³	4	50	200	1.0
(c) To local mills, chiefly soybeans.....	2	30	60	.3
(d) To feeding areas other than local.....	15	50	750	3.75
Total.....				8.175
<i>Class 1 hauls:</i>				
(a) Local deliveries by farmers' wagons, cars, and trailers.....	10			
(b) Direct sales to farmers in community (seed and feed).....	5	4	20	0.1
(c) To elevators by trucks.....	200	4	800	4.0

¹Assuming average size of load of 200 bushels. On longer hauls (Class 2 and 3), loads would be heavier, but the wear on tires would be greater per truck mile. No allowance is made for back-hauls which would be most important in connection with Class 3, 2b and 2c.

²17,697,000 million bushels were received at Chicago via Illinois waterways in 1941. This came chiefly from Illinois River ports in the state of Illinois. Additional grain moved south from the lower Illinois River and from Illinois elevators on the Mississippi River.

³5,000,000 bushels were received at Chicago, chiefly from Illinois and Indiana. 2,470,136 bushels were reported by the Merchants' Exchange of St. Louis as received by "wagon and truck" in that market in 1941.

These rough estimates suggest that roughly twice as many miles of truck use are involved in Class 2 and 3 hauling of approximately 47 million bushels of grain as in hauling 200 million bushels to local elevators. Obviously, if substantial reductions are to be made in the use of trucks in transporting grain, they must come in connection with the longer hauls. This could be accomplished by setting a maximum distance which grain could be hauled by truck. Such a rule would increase the cost of grain in some deficit areas, and also lower the price received in some surplus areas where a large truck outlet has been developed, in situations where local freight charges exceed truck charges or combined truck and barge costs. However, eliminating the longer hauls would not greatly disturb the markets for grain in most parts of the state of Illinois.

Transportation outlets used by elevators. To determine trends in this connection, in the spring of 1941 a questionnaire was sent to a selected sample of Illinois elevators asking information concerning the transportation methods used in disposing of their grain. Replies were received from 44 companies or about 50 percent of those questioned. These reported handling the following quantities of grain during their latest fiscal year, in most cases for the calendar year, 1940:

<i>Kind of grain</i>	<i>Companies</i>	<i>Total (bushels)</i>	<i>Average (bushels)</i>
Corn.....	44	10 635 000	242 000
Wheat.....	30	1 290 000	43 000
Soybeans.....	43	1 328 000	31 000
Oats.....	41	2 186 000	53 000

A summary of these reports is shown by crop reporting districts in Table 1.

TABLE 1.—DISTRIBUTION OF GRAIN HANDLED BY 44 ELEVATOR COMPANIES, GROUPED BY CROP REPORTING DISTRICTS IN LAST FISCAL YEAR, CHIEFLY CALENDAR YEAR, 1940

Crop reporting districts	(1) Shipped or stored for C.C.C.	(2) Shipped by rail	(3) Total of 1 and 2	(4) Sold to local feeders or used in own mill	(5) Sold to truckers to go away	(6) Trucked by elevator to market or river elevator
A. Corn						
	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
1. Northwest.....	16	42	58	26	6	10
3. Northeast.....	8	60	68	14	0	18
4. Western.....	30	50	80	9	1	10
5. Central.....	16	72	88	5	6	1
6. Eastern.....	18	68	86	2	4	8
4a. West Southwestern....	9	37	46	39	9	6
6a. East Southeastern....	0	43	43	7	50	0
7. Southwestern.....	0	5	5	95	0	0
B. Oats						
	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
1. Northwest.....	..	50	..	45	5	0
3. Northeast.....	..	80	..	18	0	2
4. Western.....	..	39	..	54	7	0
5. Central.....	..	76	..	21	3	0
6. Eastern.....	..	90	..	1	9	0
4a. West Southwestern....	..	0	..	10	90	0
6a. East Southeastern....	..	6	..	84	10	0
7. Southwestern.....	..	0	..	100	0	0
C. Soybeans						
	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
1. Northwest.....	..	73	..	14	1	12
3. Northeast.....	..	95	..	0	0	5
4. Western.....	..	93	..	0	0	7
5. Central.....	..	91	..	0	3	6
6. Eastern.....	..	100	..	0	0	0
4a. West Southwestern....	..	84	..	3	0	13
6a. East Southeastern....	..	98	..	2	0	0
7. Southwestern.....	..	0	..	20	0	80
D. Wheat						
	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
1. Northwest.....	45	30	75	25	0	0
3. Northeast.....	0	100	100	0	0	0
4. Western.....	17	78	95	5	0	0
5. Central.....	72	28	100	0	0	0
6. Eastern.....	20	80	100	0	0	0
4a. West Southwestern....	55	43	98	2	0	0
6a. East Southeastern....	0	98	98	2	0	0
7. Southwestern.....	0	95	95	2	0	3

Corn. It is believed that the sum of items (1) corn handled for Commodity Credit Corporation and (2) corn shipped by rail, measures the rail business. These two classifications included from 80 to 86 percent of the corn handled in districts 4, 5, and 6 which include most of the heavy corn marketing counties. To the north and south the proportion shipped by rail or handled for Commodity Credit Corporation was somewhat less.

The percentages sold to local feeders or ground for feed by the elevators were highest in the northern, southern, and western parts of the state where there is more livestock in relation to feed supplies. The sales of corn to truckers varied from zero in the northeast district to 50 percent in the east southeastern. Outside of the southern third of the state, the highest percentage so sold was six percent. Such sales were reported chiefly by elevators on the northern, southern, or eastern edges of the cash corn area. Trucking by elevators was most common in the northeastern district (18 percent), northwestern (10 percent), western (10 percent) and eastern (8 percent). This largely represented sales to elevators along the Illinois River which shipped the grain by barge, largely to Chicago. Thus in 1940 the railroad was the most common method of moving Illinois corn to market with local sales important in the livestock areas, with trucking to market (river) common along the Illinois River, and sales to truckers common on the borders—particularly the southern and eastern—of the surplus corn-producing area.

Oats. A smaller percentage of the oats were shipped by rail for the state as a whole, but this was the chief outlet for the eastern (90 percent), northeastern (80 percent) and central (79 percent) districts. In several districts nearly 50 percent or more were sold locally or ground for feed. Sales to truckers were more important than for corn, and were fairly important in all districts except in the northeastern. Trucking by elevators was less common than for corn, reflecting the smaller movement of oats by the Illinois River.

Soybeans. Practically all the soybeans were shipped by rail, reflecting less barge transport of soybeans and the fact that soybean products are largely reshipped from mills on reshipping rates. In outlying areas, a larger percentage was disposed of locally than elsewhere. Very few were sold to truckers. In most areas some beans were trucked to market by the elevators, reflecting chiefly deliveries to mills in exchange for soybean meal.

Wheat. Practically all of the wheat was handled by rail for the Commodity Credit Corporation. A little was sold locally for feed either whole or ground. Practically none was sold to truckers.

Destinations of grain sold to truckers. In the northwest part of the

TABLE 2.—MANAGER'S ESTIMATE OF PERCENTAGES OF GRAIN BOUGHT BY ELEVATORS FROM OUTSIDE ITS REGULAR TERRITORY AND OF DIFFERENT KINDS OF GRAIN BOUGHT DIRECTLY FROM FARMS BY TRUCKERS OF CROP REPORTING DISTRICTS, CHIEFLY FOR CALENDAR YEAR, 1940

Crop reporting districts	Outside own territory	By trucks from farms			
		Corn	Oats	Soybeans	Wheat
	(percent)	(percent)	(percent)	(percent)	(percent)
1. Northwest.....	1	11	1	13	0
3. Northeast.....	1	1	2	1	0
4. Western.....	4	2	3	0	0
5. Central.....	1	4	12	4	0
6. Eastern.....	4	3	2	0	0
4a. West Southwestern.....	5	8	14	8	7
6a. East Southeastern.....	5	4	2	2	5

state, the principal destination reported for grain sold to truckers was Wisconsin; in western Illinois, the most common destinations were Missouri and southern states; in central Illinois, it was Missouri, Tennessee, the southeastern states, and East St. Louis; in eastern and east southeastern Illinois, most common destinations were Indiana and Kentucky with Michigan, Ohio, southern Illinois and Tennessee taking smaller quantities; in west southwestern Illinois, St. Louis and the southern states were mentioned for corn and oats and St. Louis and Springfield for soybeans. The movement of grain in 1940 by truck was therefore chiefly to the East and South, reflecting shortages of feed supplies in those areas.

Purchases by elevator outside of regular buying territory. In some areas this averaged up to 4 or 5 percent (Table 2). Such purchases involve more hauling than is necessary to get grain to a loading port.

Purchases by truckers direct from farmers. Purchases by truckers direct from farmers were estimated by most of the reporting elevators (Table 2). This practice was most common in the west southwestern area, south from St. Louis, varying from 7 to 14 percent for different grains in that area. It was least important in northeastern, western, and eastern Illinois. Opinion was about equally divided as to whether sales by farmers to truckers were increasing or decreasing but more were of the opinion that sales by elevators to truckers were decreasing than that they were increasing.

Trends in outlets. This situation is not static but changes in response to various situations: location of deficit areas, etc. The following factors may affect the situation:

1. Since the Commodity Credit Corporation tends to move its hold-

ings of corn by rail except for sales to farmers for feeding, the proportion of the grain owned by Commodity Credit Corporation influences the method of transportation. With higher prices, fewer defaults on corn loans by farmers, rapid sales of its stock, the Corporation will become less important in the corn trade in the next year than it has been in the past two. However, the reverse will be true of wheat.

2. With better crops and larger stocks of feed grain in Indiana and Ohio in 1941 than in 1940, the movement by truck in that direction would be expected to be smaller than in 1940-41. However, in view of their heavy feeding of hogs and local areas of short production, some movement has continued, particularly from Iroquois and Vermilion Counties in eastern Illinois.

3. Absence of export demand tends to restrict movements by the truck and river barge routes, particularly for shipment to the South.

4. The movement of grain by truck and river barge into the South for local consumption will likely increase.

5. The transportation of soybeans to local mills and exchange for soybean meal will probably increase, and this in turn will increase truck deliveries of soybeans at mills.

6. In spite of these trends, the railroads will continue to be the principal methods of transportation for grain and soybeans. Increasing difficulty in truck operation would cause even more to move by rail. Any restrictions on longer hauls would likewise increase the importance of rail transportation.

L. J. NORTON

CHANGES IN RURAL ORGANIZATIONS IN ILLINOIS 1930 TO 1940

Voluntary groups form an important part of life in the rural community. They are not static—they increase and decrease in numbers, kinds, and membership. Knowledge of these changes is of value to rural leaders and to rural people in general in helping make their own organizations of as much value as possible under constantly changing conditions.

A study was made of numbers, kinds, and memberships of all groups in 322 localities in 61 counties in 1930. A similar study was made in 1940 of all groups in 592 localities in 96 counties of the state; 33 localities studied in 1930 were identical with those studied in 1940.

Groups recorded included farm bureau units, farmers' unions, community clubs, community units, home bureau units, horticultural clubs, boy and girl scouts, 4-H clubs, music clubs, sewing clubs, garden clubs, various types of cooperatives, churches and church clubs, fraternal

societies, including granges, and social clubs. Localities were defined, for purposes of the study, as townships or precincts; all groups holding meetings within the locality were listed.

The number of groups listed in all localities increased by almost two-thirds (60.2 percent) from 1930 to 1940; the average number of groups per locality increased from 12.3 in 1930 to 19.7 in 1940. In the 33 identical localities there was a 30 percent increase, from an average of 16.6 groups per locality in 1930 to 21.5 in 1940. Data were secured in the 592 localities on a total of 11,658 groups in 1940; there were 3,963 groups reported in the 322 localities in 1930.

The groups were classified as educational, religious, economic, and social. All classifications increased in number in all sections of the state in the decade from 1930 to 1940, except social groups in the eastern section of the state (comprising Farming-Type Areas IV and V¹). Educational groups were most numerous both in 1930 and in 1940, making up approximately a third of the total in 1930 and increasing to about two-fifths of the total in 1940. Religious groups made up a third of the total in 1930, but declined to somewhat over one-fourth (27 percent) in 1940. Economic groups increased from one-eighth of the total in 1930 to one-fifth in 1940. Social groups declined from one-fifth of the total in 1930 to about one-sixth in 1940. In identical localities educational groups actually increased 37 percent; economic, 72 percent; and religious, 23 percent; whereas social groups declined 1.8 percent in total numbers.

Young people's groups were the most numerous of the educational type of group in 1940, there being an average of 2.7 such groups per locality. Most of these were 4-H clubs. They increased 85 percent from an average of 1.3 groups per locality in 1930.

Adult vocational groups—such as farm bureau units, home bureau units, garden clubs, and household science clubs—ranked second in number increasing from 1.6 per locality in 1930 to 2.5 per locality in 1940. Farm bureau units and home bureau units increased in number from 1930 to 1940 in identical localities; household science clubs, garden clubs, economic clubs, sewing clubs, and farmers' union locals decreased.

Though the community type of educational groups, such as community units, were not as numerous as young people's or adult avocational groups, they increased in number more than four times—more than any other type. They averaged only .5 percent per locality in 1930 and they increased to 1.8 in 1940. Parent-teacher associations were most numerous,

¹According to the division made in 1929. See "Proposed Plan Looking Toward Adjustments in the Agriculture of Illinois." By H. W. Mumford, Cir. 340, University of Illinois Agricultural Experiment Station, 1929, p. 5.

but in identical localities community clubs and community units increased most in number.

Avocational groups—such as music clubs, bands, and choral societies—increased from .6 to 1.7 per locality. However, in identical localities there was an actual decline in the number of drama groups.

Religious groups increased 30 percent in number from 1930 to 1940. The largest increase was in church clubs (they tripled in number) though they were fewest in number (only .6 percent per locality in 1940). Sunday schools increased 37 percent, from 1.8 to 2.5 groups per locality in the decade; and church congregations increased 8.7 percent, from 2.07 to 2.25 groups per locality during the decade. The largest increase in religious groups occurred in the southern part of the state where there was a 38 percent increase in number of religious groups, chiefly church clubs and congregations, though the western section also reported a 36 percent increase, chiefly church clubs and Sunday schools.

Two out of three of the social groups active in Illinois in 1940 were fraternal in nature. These included lodges, granges, and American Legion groups. They increased from 1.8 to 2 groups per locality in the decade. The greatest increase in numbers in identical localities was for American Legion Auxiliaries; the greatest decrease—a decrease of about one-third—was for lodges, though they remained most numerous among social groups even in 1940.

Significant increases in economic groups were among noncommercial—threshing and spraying rings—and among buying cooperatives. The noncommercial cooperatives more than doubled in number in the ten years. The most numerous and largest increase was in threshing rings which in many areas doubtless took the form of neighborhood use of combines. Dairy herd improvement associations also increased considerably in number. Community telephone companies, on the other hand, decreased in number; farmers doubtless felt they could do without telephones in the depression period, and many did not put them in again when prices improved. Buying cooperatives increased from but .04 cooperative per locality in 1930 to .54 cooperative in 1940. These included such groups as cooperative electric and farm supply companies; many operate on a county-wide basis and hold local meetings to get the cooperative started and keep the members informed.

Selling organizations decreased in number. The most drastic decline in number of selling cooperatives was among insurance and livestock marketing associations. The decrease occurred in all except the southern section.

Most of the groups served both farm and town people, but the proportion of the total of this type decreased during the decade from about 60 percent to 50 percent. The groups, made up chiefly of farm people, increased in proportion to the total from 32 percent to 38 percent in the ten years; those made up chiefly of town people in which farm people took some part increased from 8.5 percent to 11 percent from 1930 to 1940. The greatest proportional increase in chiefly farmer-member and chiefly town-member groups took part in northern Illinois. This would indicate that town and country cooperation was on the wane especially in areas with large metropolitan centers.

Though most groups were locals of some county, state, or national organizational system, this type decreased in proportion to the total number of groups—from 70.8 percent in 1930 to 60.4 percent in 1940; whereas the local independent groups increased proportionally during the decade. The greatest increases in local independent groups, as shown by figures in identical localities, were in noncommercial cooperation, community units, commercial clubs, and bands. Of the groups affiliated with county, state, and national organizations in 1940, 44.5 percent were religious, 36.8 percent were educational, 17 percent were social, and 1.7 percent were economic.

D. E. LINDSTROM

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Co-operative Agricultural Extension
Work. Acts of May 8 and June 30, 1911

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period.....	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929.....	95	105	104	99	103	103	104	110	110	110
1930.....	86	88	89	94	83	87	93	100	89	91
1931.....	73	65	62	80	58	58	72	84	68	75
1932.....	65	48	41	69	43	43	62	66	47	58
1933.....	66	51	45	71	49	51	72	62	50	69
1934.....	75	65	61	80	57	55	69	72	64	75
1935.....	80	79	82	81	64	65	80	78	74	87
1936.....	81	81	86	80	74	82	103	89	86	103
1937.....	86	86	96	84	80	87	103	98	102	113
1938.....	79	69	69	80	72	81	101	92	78	89
1939.....	77	65	65	78	72	81	97	99	92	108
1940.....	78	68	69	79	78	90	113	106	105	123
1941.....	87	82	87	85	101	116	136	129	149	155
1941 Apr.....	83	74	82	80	93	100	125	122	135	144
May.....	85	76	83	81	97	108	133	127	144	154
June.....	87	82	87	83	96	105	126	130	152	159
July.....	89	86	91	84	98	103	123	131	153	160
Aug.....	90	87	92	86	102	111	129	135	158	160
Sept.....	92	91	99	88	110	123	140	134	163	161
Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	135	165	166
Dec.....	94	95	99	92	134	162	176	139	170	167
1942 Jan.....	96	100	104	94	132	145	153	143	173	171
Feb.....	97	101	106	95	127	133	140	147	178	172
Mar.....	98	103	108	97	126 ¹¹	...	...	...	182 ¹¹	172 ¹¹
Apr.....	98 ¹¹	105 ¹¹	112 ¹¹	98 ¹¹	...	...	...	...	...	...

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			April 1941	Current months		
	1924-29	1940	1941		February	March	April
Corn, bu.	\$.81	\$.56	\$.63	\$.61	\$.74	\$.75	\$.76
Oats, bu.	.42	.32	.36	.36	.53	.52	.52
Wheat, bu.	1.30	.81	.93	.83	1.17	1.17	1.10
Barley, bu.	.66	.46	.55	.50	.77	.75	.78
Soybeans, bu.	1.94	.82	1.21	1.08	1.80	1.79	1.73
Hogs, cwt.	9.97	5.84	9.37	8.30	12.20	12.80	13.70
Best cutting, cwt.	8.57	8.84	10.07	9.90	11.10	11.30	11.90
Lamb, cwt.	12.22	8.52	9.85	10.50	11.00	10.80	11.40
Milk cows, head	78.00	65.00	80.00	74.00	100.00	99.00	100.00
Veal calves, cwt.	11.27	9.63	11.19	10.50	13.10	13.30	13.50
Sheep, cwt.	6.52	3.41	4.43	4.95	5.30	5.60	6.00
Butterfat, lb.	.42	.27	.33	.33	.34	.34	.36
Milk, cwt.	2.32	1.67	2.05	1.80	2.40	2.25	2.20
Eggs, doz.	.30	.17	.22	.19	.26	.25	.25
Chickens, lb.	.21	.13	.15	.16	.18	.18	.19
Wood, lb.	.36	.30	.37	.35	.40	.40	.41
Apples, bu.	1.59	1.14	1.07	1.20	1.35	1.65	1.65
Pears, bu.	13.88	6.68	8.49	8.30	12.50	12.70	13.00
Potatoes, bu.	1.39	.83	.82	.80	1.25	1.25	1.40

¹²For sources of data in tables see previous page.

Co-operative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

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ADJUSTING MILK DISTRIBUTION TO MEET A TIRE SHORTAGE

Every retail distributor in the United States is faced with the fact that under government decree there will be no more tires for retail deliveries until further notice. Furthermore, it is probable that, even with the production of synthetic rubber, there will be no tires for retail deliveries before 1944 or 1945. This raises the question: What should be done to adjust retail milk distribution to meet this tire shortage?

The two main alternatives to motor truck delivery of milk to homes are use of horse-drawn vehicles, and stores and other wholesale outlets. Two of the 10 distributors, for example, in Champaign-Urbana, have a market-wide distribution with horse-drawn vehicles. These two dealers have no acute adjustment problems, and assuming that they can materially increase their loads, it is likely that most Champaign-Urbana consumers desiring home-delivery service can continue to receive this service by paying for it.

In contrast is the city of Kennewick, Washington, where beginning April 1, 1942, the dairies stopped all home deliveries of milk and cream and are now marketing these products entirely through stores and milk depots, hotels, and restaurants. It is probable that as tires wear out,

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

CITIES	CENTS PER QUART											
	1939				1941				MARCH 1942			
	2	4	6		2	4	6	8	2	4	6	8
LOUISVILLE	7.91				7.67				8.1			
KANSAS CITY, MO	7.74				7.24				7.6			
CHICAGO	7.46				8.77				9.7			
ST. LOUIS	7.40				8.02				8.8			
MINNEAPOLIS	7.21				7.31				6.6			
DENVER	7.20				6.79				7.6			
ROCHESTER	7.14				6.62				7.1			
BUFFALO	6.84				7.48				7.5			
NEW YORK	6.82				8.23				7.8			
HOUSTON	6.78				7.13				7.4			
NEW ORLEANS	6.73				8.44				9.0			
24 CITY AVERAGE	6.59				7.02				7.32			
INDIANAPOLIS	6.55				6.98				7.9			
PITTSBURGH	6.53				6.89				7.1			
WASHINGTON	6.47				6.75				4.6			
BALTIMORE	6.24				6.00				6.3			
BOSTON	6.14				6.50				6.7			
SAN FRANCISCO	6.06				7.17				7.3			
CLEVELAND	6.05				6.63				7.1			
SEATTLE	6.04				6.48				7.3			
CINCINNATI	5.96				6.57				7.6			
PHILADELPHIA	5.83				5.92				6.5			
DETROIT	5.77				6.50				7.3			
MILWAUKEE	5.67				6.21				6.2			
LOS ANGELES	5.63				6.27				6.5			

FIG. 1.—HOME-DELIVERY COSTS OF DISTRIBUTING MILK TO CONSUMERS AS MEASURED BY DEALERS' GROSS HANDLING MARGINS IN 24 CITIES WITH POPULATIONS OF 300,000 OR OVER, 1939, 1941, AND MARCH, 1942

more and more cities and villages in the United States will find themselves in a situation similar to Kennewick. With this situation in mind, what can be done effectively to serve consumers with milk and cream so as to maintain, and even to increase, per capita consumption?

Shifting to every-other-day deliveries. What about every-other-day deliveries as a means of eliminating mileage, conserving tires, and lowering distribution costs? A study of ten routes in Ithaca, New York,¹ showed that on the average, (1) 20.5 miles per route, or 41.5 percent, of the mileage could be eliminated by every-other-day deliveries; (2) that about one of every four routes could be eliminated; and (3) savings of from 1 to 1½ cents per quart could be effected.

These facts indicate a practical way (1) of conserving tires now on trucks used in retail deliveries, and (2) of lowering distribution costs. For each 60 days that tires and trucks would last with daily deliveries, they would last 100 days with every-other-day deliveries. Use of every-other-day deliveries will prolong the use of trucks for home deliveries but must necessarily be considered a temporary expedient if the tire shortage remains acute for any great length of time.

Shifting to horse-drawn vehicles. Many dealers are asking themselves today: Can I shift my home deliveries of milk to horse-drawn vehicles? While this plan would be feasible for a limited number of

¹Cornell University Farm Economics, February, 1942, pp. 3245-3246.

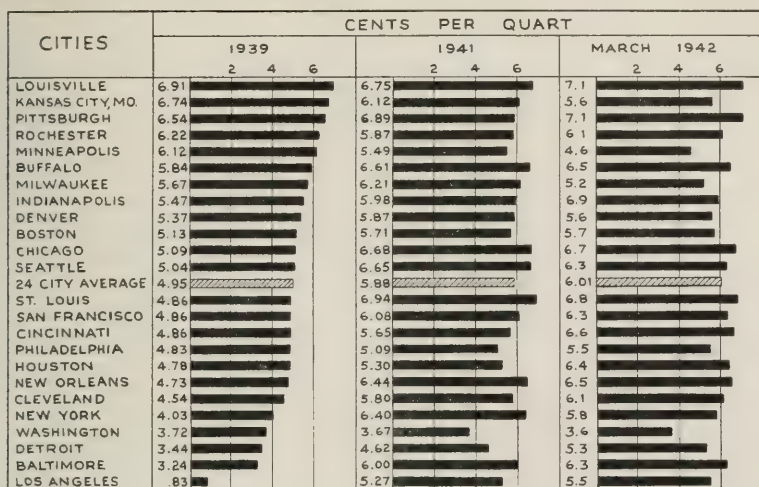


FIG. 2.—COSTS OF DISTRIBUTING MILK TO CONSUMERS THROUGH STORES AS MEASURED BY DEALERS' GROSS HANDLING MARGINS IN 24 CITIES WITH POPULATIONS OF 300,000 OR OVER, 1939, 1941, AND MARCH, 1942

dealers, it would not be practical for most dealers in the country because of (1) average length of haul, and (2) difficulties of securing horses and equipment.

The length of haul for the home delivery of milk in most of our larger cities has materially increased during the past 15 years. In Chi-

TABLE 1.—COSTS FOR DISTRIBUTING MILK TO CONSUMERS AS MEASURED BY DEALERS' GROSS HANDLING MARGINS IN 83 MARKETS, 1929 TO MARCH, 1942
(Cents per quart)

Size of cities	Number in group	1929-1939 average	1939	1940	1941	March 1942
A. Distribution of milk through stores						
300,000 and over.....	24	4.97	4.95	5.45	5.88	6.01
100,000 to 300,000.....	26	5.57	5.92	6.14	6.08	6.80
Under 100,000.....	33	5.47	5.64	5.84	5.93	6.56
83-city average.....	..	5.36	5.53	5.82	5.96	6.47
B. Home deliveries of milk						
300,000 and over.....	24	6.29	6.59	6.60	7.02	7.32
100,000 to 300,000.....	26	6.47	6.60	6.64	6.86	7.42
Under 100,000.....	33	5.91	6.11	6.06	6.27	6.92
83-city average.....	..	6.20	6.40	6.40	6.67	7.19

TABLE 2.—COSTS OF DISTRIBUTING MILK TO CONSUMERS AS MEASURED BY DEALERS'
GROSS HANDLING MARGINS FOR CITIES OF 100,000 TO 300,000, 1939 TO MARCH, 1942^a
(Cents per quart)

	Home delivery margins				Margins for store sales			
	1939	1940	1941	March 1942	1939	1940	1941	March 1942
Birmingham.....	8.25	8.38	8.37	8.7	7.25	7.38	7.37	7.7
Jacksonville.....	7.82	7.82	9.13	9.8	7.82	7.82	9.13	9.8
Miami.....	7.62	7.68	8.01	8.7	7.62	7.26	7.84	8.7
Kansas City, Kansas.....	7.41	7.34	7.35	8.6	7.24	7.34	7.18	8.6
Tulsa.....	7.17	7.02	7.36	8.8	6.17	6.14	6.36	7.8
St. Paul.....	7.03	6.39	6.50	6.2	6.03	5.37	5.75	6.2
Utica.....	6.94	6.97	7.14	7.6	5.94	6.47	6.14	6.6
Albany.....	6.89	6.70	7.15	7.6	6.89	6.70	4.75	6.2
Bridgeport.....	6.84	6.84	6.93	7.1	5.84	5.84	5.93	6.1
South Bend.....	6.78	6.91	7.22	8.5	6.78	6.91	7.22	8.5
New Haven.....	6.76	6.67	6.93	7.1	5.84	6.13	5.93	6.1
Hartford.....	6.76	6.76	6.93	7.1	5.76	5.76	5.93	6.1
San Diego.....	6.58	6.76	6.89	8.2	5.24	5.76	5.47	8.2
Des Moines.....	6.55	6.57	6.64	7.3	5.55	6.57	5.64	6.3
Dayton.....	6.40	6.39	6.87	7.5	5.40	5.89	5.87	6.5
Richmond.....	6.35	6.11	6.12	6.2	6.35	6.11	6.12	6.2
Lowell.....	6.28	6.39	6.58	7.2	5.28	5.39	5.58	6.2
Salt Lake City.....	6.17	5.83	5.87	6.8	6.17	5.25	4.87	5.8
Wichita.....	6.10	6.79	6.88	7.3	6.10	6.79	6.88	7.3
Dallas.....	6.09	6.12	6.62	7.2	4.92	5.12	5.53	6.2
Grand Rapids.....	6.08	6.38	6.48	7.1	5.08	5.88	5.29	5.1
Wilmington.....	6.07	6.07	6.12	6.8	5.07	6.07	5.29	5.8
Omaha.....	5.94	6.21	6.31	6.8	4.86	5.29	5.31	5.8
Akron.....	5.81	5.68	6.32	6.9	4.31	4.68	4.90	6.9
Knoxville.....	5.72	6.50	6.80	7.5	5.64	6.50	6.80	7.5
Memphis.....	5.23	5.31	5.15	4.6	4.89	5.31	5.15	4.6
26-city average.....	6.60	6.64	6.86	7.42	5.92	6.14	6.08	6.80

^aData from U. S. Department of Agriculture Fluid Milk Reports and Trade Association Reports.

cago, for example, only 28 percent of milk sales were home deliveries in 1941 compared with 85 percent in 1929.¹ With trucks, the longer haul could be made with but little difficulty though at a higher unit cost. Under present conditions, however, unit distribution costs with horse-drawn vehicles in most areas would be prohibitive in competition with low-cost store distribution.

Producer-distributors distribute a large proportion of milk sold in the smaller villages and towns in the United States. In Connecticut, for example, it is estimated that one-third of the milk for home deliveries is distributed by producer-distributors.² For most of these dairymen the distance from their farms to their market outlets would make horse-drawn vehicles impractical.

Principles of efficient store distribution. Diversion of home deliveries of milk to stores and milk depots probably is the most practical alternative for dealers who are forced to shift their method of distribu-

¹*Illinois Farm Economics*, January, 1942, p. 197.

²Estimate of an economist of the Connecticut Agricultural Extension Service, March, 1942.

TABLE 3.—COSTS OF DISTRIBUTING MILK TO CONSUMERS AS MEASURED BY DEALERS'
GROSS HANDLING MARGINS FOR CITIES OF LESS THAN 100,000,
1939 TO MARCH, 1942^a
(Cents per quart)

	Home delivery margins				Margins for store sales			
	1939	1940	1941	March 1942	1939	1940	1941	March 1942
Winston-Salem.....	8.38	8.40	8.61	9.2	8.38	8.40	8.61	9.2
Lexington.....	7.38	7.17	7.05	7.4	5.26	5.93	5.63	5.4
Pueblo.....	7.18	7.43	7.17	7.4	6.18	6.43	6.25	6.4
Fresno.....	7.04	6.80	7.31	7.5	6.04	5.80	6.39	6.5
Evansville.....	6.92	6.53	6.84	7.4	6.92	6.53	6.84	6.4
Santa Barbara.....	6.76	6.30	6.78	6.4	5.76	5.30	5.78	5.4
Altoona.....	6.67	6.76	6.72	7.1	6.67	6.76	6.72	7.1
El Paso.....	6.47	6.09	6.62	7.3	4.47	5.36	5.37	7.3
Wheeling.....	6.38	6.48	6.71	7.2	6.38	6.48	6.71	7.2
Kalamazoo.....	6.32	6.10	6.40	6.8	4.99	5.44	6.15	5.8
Davenport.....	6.31	6.31	6.51	7.7	6.31	6.31	6.51	7.7
Iowa City.....	6.31	5.94	6.19	6.9	4.31	5.94	6.19	5.9
Butte.....	6.29	6.29	6.14	6.1	6.29	6.29	6.14	6.1
Lawrence.....	6.28	6.48	6.58	7.2	5.28	6.48	5.58	6.2
Sioux Falls.....	6.27	5.77	6.37	6.6	5.27	5.77	5.70	6.6
Fort Dodge.....	6.26	6.26	6.47	7.0	5.93	6.26	6.47	7.0
Topeka.....	6.06	6.11	6.18	6.4	6.06	6.11	6.18	6.4
Mason City.....	5.93	5.86	6.27	6.7	5.93	5.82	6.27	6.7
Sioux City.....	5.85	6.04	5.80	5.8	5.35	6.04	5.80	5.8
Nashua.....	5.85	6.09	6.12	6.2	4.85	5.26	5.12	5.2
Colorado Springs.....	5.84	5.96	6.10	6.5	5.84	5.96	5.77	6.5
Kenosha.....	5.77	5.93	6.26	7.7	5.68	5.93	5.92	7.7
Beloit.....	5.72	5.62	6.10	7.1	5.72	5.62	6.10	7.1
Manchester.....	5.61	5.52	6.19	6.8	5.61	5.52	6.19	6.8
Ottumwa.....	5.61	5.76	5.77	6.5	5.61	5.76	5.43	6.5
Wausau.....	5.53	5.27	5.40	6.9	5.53	5.27	5.40	5.9
Cumberland.....	5.37	5.43	5.24	7.2	5.37	5.43	5.24	7.2
Lincoln.....	5.28	5.16	4.34	7.9	5.28	5.16	4.34	7.9
Burlington.....	5.23	5.63	6.41	7.8	4.73	4.90	4.66	6.8
Winona.....	5.23	4.88	5.02	5.7	5.23	4.88	5.02	5.7
Lansing.....	5.23	4.99	5.58	5.3	5.23	4.99	5.58	5.3
Madison.....	5.22	5.34	6.06	6.8	4.64	5.34	6.06	6.8
33-city average.....	5.4	5.14	5.46	5.9	5.14	5.14	5.46	5.9
83-city average.....	6.11	6.06	6.27	6.92	5.64	5.84	5.93	6.56
	6.40	6.40	6.67	7.19	5.53	5.82	5.96	6.47

^aData from U. S. Department of Agriculture Fluid Milk Reports and Trade Association Reports.

tion of milk. Since it is probable that this adjustment will be effected in most cases under conditions of stiff competition, it is desirable both from a public viewpoint and from an industry viewpoint that each dealer effect his adjustment to wholesale outlets in the most efficient manner possible.

Distribution costs vary widely, not only between dealers in a particular market¹ but also between different markets. For example, using the dealers' gross handling margin as a measure of what milk distribution costs consumers, one finds that in March, 1942, the average margin for store sales ranged from 3.6 cents per quart for Washington, D. C., to 9.8 cents per quart for Jacksonville, Florida (Fig. 2, and Tables 1 and 2). In March, 1942, the store margin for the 24 cities with over 300,000

¹*Illinois Farm Economics*, November, 1940, pp. 421-428.

TABLE 4.—COSTS OF RECEIVING, PROCESSING, BOTTLING, AND DELIVERY OF MILK TO STORES, LOS ANGELES, CALIFORNIA,^a 1938 TO 1941

	1941 ^b paper half gal.	1941 paper quarts	1940 paper	1939 paper	3rd quarter 1938 glass
Number of bottles.....	3 620 267	7 916 930	13 140 341	14 283 658	2 193 233
Distribution costs: cents per quart					
Plant costs					
Labor.....	.240	.247	.179	.251	.390
Depreciation and overhead.....	.255	.287	.219	.311	.469
Shipping expenses.....	.145	.118	.117	.172	.338
Office expenses.....	.015	.024	.022	.025	.032
Selling expenses.....	.020	.030	.028	.034	.036
Total plant costs.....	.675	.706	.565	.793	1.265
Delivery expenses.....	.260	.260	.324	.382	.721
Total plant and delivery costs...	.935	.966	.889	1.175	1.986
Paper bottle cost.....	.830	.794	.892	.898	....
Bottle caps.....	.....	.....	.....	.....	.062
Total per bottle.....	1.765	1.760	1.781	2.073	2.048

^aData obtained through the courtesy of R. C. Sneed, president of the Lucerne Cream and Butter Company. Of the total units included in the above computation, 98.2 percent were quarts.

^bIn the latter part of 1941, all milk was distributed in half-gallon containers, while quart containers were used during the first part of the year.

people averaged 6.01 cents, or 2.4 cents per quart above that for Washington, D. C.

To what factors can low costs of store distribution be attributed? A review of certain facts indicates that low handling margins in Washington, D. C., are the result of efficient processing and distribution of milk. In 1941, costs of store distribution for one company in Los Angeles averaged 1.76 cents per quart (Table 4). These costs were only a small fraction of a cent lower than the costs of this same company in Washington. Efficiency in the store distribution of milk as shown by this and other studies¹ is directly associated with the following practices:

1. Exclusive stops—only one dealer per store, restaurant, or milk depot.
2. A large volume per stop.
3. A large volume per route.
4. Giving consumers the benefits of savings from large volumes in a lower price for milk.

Actual margins for a large volume of store milk in Washington were even lower than those shown for single quarts since the bulk of store sales there are now made in two-quart containers at a lower price. In March, 1942, the margin for milk sold in two-quart containers in Washington

¹*Ibid.*

averaged 3.1 cents per quart. Deducting one cent per quart, the usual store cost for handling milk gave a net margin of 2.1 cents per quart for plant costs and costs for delivering milk to the store. This was ample to cover itemized costs shown in Table 4.

Studies of handling margins in 83 city markets show that these have increased both for home deliveries and for store sales during the past two or three years (Figs. 1 and 2, and Tables 1, 2 and 3). In March, 1942, home-delivery margins of the 83 cities averaged .79 cent per quart above those for 1939. Margins for store sales increased .94 cent per quart during the same period. *

The country is now at war and conservation of tires and trucks is absolutely essential. Undoubtedly, a greater proportion of milk will be distributed through stores. From a practical viewpoint it is unreasonable to expect all markets to handle store milk as efficiently as it is being handled in Washington, D. C. On the other hand, it is clear that costs to consumers, particularly for store distribution of milk are too high, and can be reduced as much as 2 to 3 cents per quart through use of more efficient methods. Hence it is clearly to the long-time interest of consumers and farmers, as well as from the emergency viewpoint in connection with the tire situation, that dealers in the United States adopt more generally the methods of distribution efficiency now being used by only a few dealers.

R. W. BARTLETT.

HOW TENURE, DEBT AND SIZE OF BUSINESS AFFECTED INCREASES IN MILK PRODUCTION FROM 1940 TO 1941, McHENRY COUNTY, ILLINOIS

The following analysis is based upon the level of milk production for 96 identical dairy farms and operators in McHenry County, Illinois, for the calendar years 1940 and 1941.¹

From 1940 to 1941, milk production increased 11.8 percent for the 96 farms. Total milk receipts going through the "Chicago Pool" increased by 11.9 percent² during the same period, but the number of producers sending milk through the pool increased by 2.8 percent.² On a per-farm basis, the increase in production of milk for the 96 farms studied averaged about 2.5 percent higher than for the market as a whole. The price of

¹This is part of the data gathered on a Farm Credit Survey of McHenry County for 1940 and 1941. Farms survey for this study were selected as representative of all farms in the county.

²Ratios were calculated from data published in "Federal Milk Market Administrator Report," Volume III, Number 5, April, 1942.

TABLE 1.—THE AVERAGE CHANGE IN MILK PRODUCTION PER FARM FROM 1940 TO 1941 FOR 96 MCHENRY COUNTY, ILLINOIS, DAIRY FARMS, GROUPED BY TENURE

Tenure	Farms	1940		1941		Increase in production per farm	
		Dairy cows	Production per cow ^a	Dairy cows	Production per cow ^a		
	No.	No.	lb.	No.	lb.	%	lb.
Owner-operators	34	20.6	7 432	20.7	7 663	3.6	5 525
Part-owner operators ^a	10	22.6	7 258	24.3	7 969	18.1	29 616
Total	44	21.0	7 390	21.5	7 730	7.1	11 005
Cash tenants ^b	32	20.4	7 331	21.7	7 747	12.4	18 558
Livestock share 50-50% ^c	14	25.6	6 462	27.7	6 952	16.4	27 143
Livestock share 100% ^d	6	34.0	7 293	35.8	7 948	14.7	36 576
All livestock share	20	28.1	6 712	30.2	7 262	16.3	30 705
All tenants	52	23.4	7 092	25.0	7 556	13.8	22 947
All farms	96	22.1	7 230	23.4	7 637	11.8	18 923

^aOwners that rented additional cropland.

^bIncludes two crop-share tenants.

^cWhere the landlord furnishes half the dairy cattle.

^dWhere the landlord furnishes all the dairy cattle.

^eAll milk production data is converted to a 3.5% butterfat basis.

TABLE 2.—THE AVERAGE CHANGE IN MILK PRODUCTION PER FARM FROM 1940 TO 1941 FOR 97 MCHENRY COUNTY, ILLINOIS, DAIRY FARMS GROUPED BY TENURE AND TOTAL DEBT TO PROPERTY RATIO^a

Tenure	Debt ratios	Farms	1940		1941		Increase in production per farm	
			Dairy cows	Production per cow ^a	Dairy cows	Production per cow ^a		
		No.	No.	lb.	No.	lb.	%	lb.
Owners and part-owners....	0	9	21.5	7 648	22.0	7 063	(-) 5.5 ^b	(-) 9 046 ^b
	1-19	5	18.1	6 837	18.8	7 323	11.3	13 923
		14	20.3	7 358	20.9	7 156	.	193
	20-39	19	20.2	7 798	21.3	8 362	13.1	20 591
	40+	11	23.4	6 735	23.1	7 378	8.1	12 833
		30	21.4	7 408	22.0	8 001	11.0	17 491
Owners only	Under 20	12	19.9	7 419	20.1	7 045	(-) 4.1 ^b	(-) 6 034 ^b
	20 and over	22	21.0	7 439	21.1	7 999	8.0	12 560
Tenants	0	10	29.8	7 804	31.0	8 248	9.9	23 129
	1-19	15	20.8	7 329	22.3	7 883	15.3	23 348
		25	24.4	7 519	25.8	8 029	12.9	23 685
	20-39	16	23.2	6 922	24.3	7 413	12.2	19 546
	40+	11	21.5	6 372	24.2	6 691	18.2	24 924
		27	22.5	6 698	24.3	7 119	14.8	22 287

^aThe ratio of total debts to total assets.

^bDecrease.

^cSee Table 1.

TABLE 3.—THE AVERAGE CHANGE IN MILK PRODUCTION PER FARM FROM 1940 TO 1941
FOR 97 McHENRY COUNTY, ILLINOIS, DAIRY FARMS
GROUPED BY SIZE OF FARM BUSINESS^a

Tenure	Productive man-work units	Farms	1940		1941		Increase in production per farm	
			Dairy cows	Production per cow ^c	Dairy cows	Production per cow ^c		
Owners and part-owners...	Under 400 400-549	No.	No.	lb.	No.	lb.	%	lb.
		10	13.7	7 344	12.5	7 089	(-)11.9 ^b	(-)12 000 ^b
		11	18.3	7 518	19.9	7 844	13.5	18 516
	550-699 700 and over	21	16.1	7 435	16.4	7 484	2.5	3 034
		15	22.4	7 584	22.8	7 996	7.3	12 427
		8	31.5	6 920	32.8	7 885	18.6	40 648
Owners only....	Under 550	23	25.6	7 353	26.3	7 957	11.2	21 032
		17	15.5	7 577	15.5	7 455	(-) 1.6 ^b	(-) 1 891 ^b
	550 and over	17	27.1	7 771	27.4	8 375	9.0	18 881
		17	27.1	7 771	27.4	8 375	9.0	18 881
Tenants.....	Under 400 400-549	7	12.4	7 123	12.6	7 556	7.8	6 880
		14	18.2	6 991	19.2	7 020	5.9	7 548
		21	16.3	7 035	17.0	7 199	6.7	7 713
	550-699 700 and over	15	22.5	7 310	25.1	7 800	19.0	31 305
		16	33.6	6 962	35.3	7 795	17.6	41 240
		31	28.2	7 130	30.4	7 797	17.9	35 963

^aSize of business is measured by productive man-work units. A productive man-work unit is a 10-hour working day standard applied to each kind of crop and type of productive livestock. These standards are based upon detailed records of labor requirements for each type of productive farm enterprise.

^bDecrease.

^cSee Table 1.

milk paid to producers averaged over 20 percent¹ higher in 1941 than in 1940 in the Chicago area.

Tenure groups. Between these two years, owner-operated farms had a much lower increase in milk production than did either part-owner-operated farms or any of the tenant groups (Table 1). The percentage increase in production for the owner-operators averaged 3.6, while for all other tenure groups, it averaged between 12 and 18 percent. Owners and part-owners together increased their average production by 7.1 percent, while all tenants increased theirs by 13.8 percent.

Debt ratios. Intensity of indebtedness showed considerable correlation with changes in milk production for owners and part-owners, but very little correlation for tenants (Table 2). Owners with debt-ratios of less than 20 percent decreased their milk production by 4.1 percent, and owners with debt-ratios of 20 percent or more increased theirs by 8.0 percent. For owners and part-owners combined, milk production increased .1 percent for the low-debt group, and 11.0 percent for the high-debt group. The low-debt tenants increased their milk production by 12.9 percent and the high-debt tenants by 14.8 percent.

¹See footnote 2 on page 299.

Size of business. Size of farm business was directly correlated with increased milk production between 1940 and 1941 for all tenure groups (Table 3). Owner-operators only with under 550 productive man-work units, showed a decrease of 1.6 percent in milk production in 1941 from 1940 as compared with an increase of 9.0 percent per farm with 550 or more p.m.w.u. The same relationship was true when owners and part-owners were combined, increases being 2.5 percent on small farms and 11.2 percent on large farms. Tenants with less than 550 p.m.w.u. increased their milk production by 6.7 percent while tenants with 550 or more p.m.w.u. increased theirs 17.9 percent.

Total increase in milk production for all farms grouped by size in the study are shown in the following table:

	Owners and part-owners	Tenants	All farms
Small farms.....	11.6	12.7	12.4
Large farms.....	88.4	87.3	87.6
Total.....	100.0	100.0	100.0

Large farms in this study accounted for 88 percent of the increase in total milk production and small farms for only 12 percent. In interpreting this, we must recognize that there were more large farms than small in our sample in each tenure group. But, if put on a per farm basis, the ratios are similar, as shown by the following:

	Owners and part-owners	Tenants	All farms
Small farms.....	12.6	17.7	15.9
Large farms.....	87.4	82.3	84.1
Total.....	100.0	100.0	100.0

Farm for farm each large farm accounted for 84 percent of the increase in total milk production and each small farm for 16 percent.

Summary

1. Milk production for the 96 identical farms and operators increased on the average by 11.8 percent from 1940 to 1941.

2. Owner operators had a significantly lower rate of increase than any other tenure group.

3. Low-indebted owners and part-owner farms showed a significantly lower rate of increase in milk production than the high-debt group.

4. Low- and high-debt tenants increased their production of milk at virtually the same rate.

5. For all tenure groups, small size farm businesses showed a significantly lower rate of increase in milk production than the larger farms.

6. More than four-fifths of the total increase in milk production occurred on the larger farms, i.e., those with more than 550 productive man-work units.

B. D. PARRISH and L. J. NORTON

CHANNELS USED BY ILLINOIS FARMERS IN SELLING LIVESTOCK

The first cooperative research project in marketing undertaken jointly by a large group of midwestern agricultural experiment stations deals with the marketing of livestock. Some fourteen states are studying the same problem, in the same way. As a result, within a few months there will be available the first comprehensive analysis of the channels thru which farmers of the midwest sell and buy livestock.

The analysis for Illinois is based on reports furnished by 3227 farmers and stockmen.

Information supplied by these producers shows that terminal markets lead by a wide margin as the outlet for Illinois slaughter livestock—over 77 percent of slaughter cattle, over 75 percent of slaughter sheep and lambs, and over 61 percent of slaughter hogs taking that route.

PERCENTAGES OF KINDS OF LIVESTOCK SOLD THRU DIFFERENT CHANNELS
BY ILLINOIS FARMERS IN 1940

	Terminal public markets	Conc. yards or local markets	Packing plants	Dealers or truck buyers	Local coop. assns.	Auctions or sale barns	Farmers or others	Total
Cattle and calves								
Slaughter.....	77.6	7.2	5.6	3.8	1.3	1.9	2.6	100.0
Veal calves.....	40.5	14.3	9.2	22.3	3.7	5.0	5.0	100.0
Stocking and feeder.....	22.1	6.5	4.4	13.5	2.1	11.4	40.0	100.0
Dairy and breeding.....	20.0	5.5	2.8	10.2	2.6	8.0	50.9	100.0
Total.....	63.1	8.6	6.1	8.7	1.9	3.5	8.1	100.0
Hogs and pigs								
Slaughter.....	61.9	19.3	10.5	2.1	4.5	.2	1.5	100.0
Feeder.....	13.9	3.7	6.6	13.8	4.2	10.2	47.6	100.0
Breeding.....	17.1	2.3	1.7	7.4	2.4	5.7	63.4	100.0
Total.....	59.0	18.3	10.2	2.8	4.4	.8	4.5	100.0
Sheep and lambs								
Slaughter.....	75.7	13.3	3.6	1.9	3.8	.9	.8	100.0
Feeder.....	74.4	1.4	1.1	13.2	.3	1.7	7.9	100.0
Breeding.....	11.6	2.3	.1	5.4	.3	10.8	69.5	100.0
Total.....	73.4	12.3	3.4	2.6	3.5	1.2	3.5	100.0

Sales by farmers to farmers were important in the case of stocker and feeder cattle (40%), of dairy and breeding cattle (50.9%), of feeder pigs and of breeding swine (47.6 and 63.4%), and of breeding sheep (69.5%).

Sales to local livestock dealers or trucker buyers included 22.3 percent of the veal calves, and over 13 percent of stocker and feeder cattle—of feeder pigs—of feeder sheep and lambs.

Sales thru concentration yards and local stockyards took 14.3 percent of veal calves, 19 percent of slaughter hogs, and 13 percent of slaughter lambs.

Sales direct to packing plants took 5.6 percent of the slaughter cattle, 9.2 percent of the veal calves, 10.5 percent of the slaughter hogs, and 3.6 percent of the slaughter sheep and lambs.

Sales thru auctions included 11.4 percent of stocker and feeder cattle, 10.2 percent of feeder pigs, and 10.8 percent of breeding sheep. Only 1.9 percent of slaughter cattle, less than 1 percent of slaughter hogs or slaughter sheep, were reported as disposed of thru auctions, 5 percent of veal calves moving that way.

The percentages of the different kinds of livestock marketed thru the different channels are shown in the table on page 303.

Percentages of livestock marketed through different channels vary greatly between states, Illinois being one of the highest in percentage sold thru public markets. It is apparent that Illinois farmers still favor the public markets.

From the farmers' standpoint a major consideration is whether the methods of marketing used strengthen or weaken farmers' bargaining power in the livestock marketing field.

R. C. ASHBY

THE AVAILABILITY OF FARM CREDIT IN McHENRY COUNTY, ILLINOIS, 1941¹

The following article is based upon data taken from a farm credit survey of 146 farm operators for the calendar year 1941. Financial data apply only to the operator's share of the business, size of farm measures the entire farm unit.

Tenure

Changes in net worths, borrowings, and repayments for farm operators in different tenure groups are shown in Table 1.

¹This article is the third in a series relating farm credit to present conditions. The first, based on 1940 data, was published under a similar title in *Illinois Farm Economics* in January 1942. The second is published in this issue.

TABLE 1.—AVERAGE FINANCIAL CHANGES BY TENURE GROUPS:
MCHENRY COUNTY, ILLINOIS, 1941

Item	Owners	Part-owners	Total owners part-owners	Cash-and crop-share tenants	Live-stock ^a share 50-50	Live-stock ^b share 100%	Total live-stock share	Total tenants
Number of farms.....	51	15	66	50	23	7	30	80
Increased assets.....	\$1 515	\$1 815	\$1 584	\$1 921	\$801	\$1 471	\$ 958	\$1 559
Increased liabilities.....	473	450	467	489 ^c	92	23 ^c	64	282 ^c
Increased net worth.....	1 988	2 265	2 051	1 432	893	1 448	1 022	1 277
Percent increase in n. w.	10.0	13.3	10.7	20.9	20.9	26.2	22.4	21.3
Debt ratio ^d : Total.....	25	36	28	20	30	7	25	21
Short-term.....	11	21	14	20	29	7	25	21
Long-term.....	32	46	35	..	..	..	..	..
New borrowings during year	\$ 505	\$ 752	\$ 561	\$1 284	\$ 605	\$ 96	\$ 486	\$ 985
New borrowings remaining unpaid at end of year..	391	508	418	1 045	475	91	386	798
Percent of new borrowings unpaid.....	77	68	75	81	79	95	79	81
Gross repayments during year.....	\$ 978	\$1 202	\$1 028	\$ 795	\$697	\$ 73	\$ 550	\$ 703
Paid on old debts.....	864	958	885	556	567	68	450	516
Percent of total old debts paid.....	15	11	14	42	40	* 23	39	41

^aLandlord and tenant each own one-half of the dairy herd.^bLandlord owns all the dairy herd.^cIncrease.^dThis refers to the percent that specified class of debts were of specified class of assets.

*Debts outstanding at the beginning of the year.

Changes in net worth. In each tenure group, assets averaged higher at the end of the year than at the beginning. Moreover, the average increase was about the same for owners and part-owners as for tenants. The increase for all livestock-share tenants averaged only half as much as for the cash- and crop-share tenants. The average owner reduced his debts \$467 during the year; the average tenant increased his debts by \$282. The average cash and crop-share tenant increased his debts the most—an average amount of \$489. When changes in liabilities are allowed for, tenants increased their net worths by nearly \$800 less than did owners. This difference in net worth reflects the larger capital investment of owners; in relation to net worths, the increase in net worth was 10.7 percent for owners and part-owners and 21.3 percent for tenants.

Debt ratios. The average owner was using 28 cents of borrowed capital for each dollar of capital; the average tenant, 21 cents. Owners were borrowing 35 percent of the value of their land and 14 percent of their working capital. Part-owners had the highest debt ratio (36 percent) and livestock-share tenants, owning half their dairy cattle, were next (30 percent). The lowest debt ratios were for the livestock-share tenants with the landlord furnishing all the dairy cattle (7 percent).

TABLE 2.—AVERAGE FINANCIAL CHANGES OF TENURE GROUPS BY TOTAL DEBT TO PROPERTY RATIO,^a McHENRY COUNTY, ILLINOIS, 1941

Item	Debt to property ratios ^a							
	Owners and part-owners				Tenants			
	0	1-19	20-39	40 and over	0	1-19	20-39	40 and over
Number of farms.....	12	10	26	18	20	21	22	17
Increased assets.....	\$1 086	\$1 042	\$1 671	\$2 091	\$2 175	\$1 994	\$ 938	\$1 127
Decreased liabilities.....	103 ^b	207	616	779	335 ^b	864 ^b	274	218 ^b
Increased net worth.....	983	1 249	2 287	2 870	1 840	1 130	1 212	909
Percent increase in net worth.....	4.1	6.3	12.3	17.6	22.4	17.0	20.8	31.9
Debt ratio ^a : Total.....	0	10	30	48	0	9	29	59
Short-term.....	0	13	10	27	0	10	29	59
Long-term.....	0	10	40	59	..	..	..	..
New borrowings during year.....	\$ 137	\$ 132	\$ 492	\$1 181	\$ 399	\$1 520	\$ 605	\$1 504
New borrowings remaining unpaid at end of year.....	103	12	405	871	335	1 267	437	1 228
Percent of new borrowings unpaid.....	75	9	82	74	84	83	72	82
Gross repayments during year.....	\$ 34	\$ 339	\$1 108	\$1 960	\$ 64	\$ 656	\$ 879	\$1 286
Paid on old debts ^c	0	219	1 021	1 650	0	403	711	1 010
Percent of total old debts paid ^c.....	.....	10.6	14.5	13.0	.....	74.8	37.9	35.7

^aThis refers to the percent which specified class of debts were of specified class of assets.^bIncrease.^cDebts outstanding at the beginning of the year.

Borrowings and repayments. On the average, owners borrowed \$561 during the year and repaid 25 percent of these borrowings in addition to 14 percent of their debts outstanding at the beginning of the year. Tenants borrowed \$985 on the average and repaid 19 percent of these borrowings in addition to 41 percent of their debts outstanding at the beginning of the year. The lower percentage of old debts paid by owners reflects the larger total debts chiefly in real estate mortgages.

Debt Ratios

In Table 2 similar changes are shown for the tenure group classified according to debt ratios (percentage that debts are of assets).

Changes in net worth. For owners, the higher the debt ratio, the greater the increase in assets, reflecting the fact that it paid to build up size of business by using borrowed funds. For tenants, those with lower debts had greater increases in assets, reflecting larger business units. The higher the debt ratio among the owners, the greater the decrease in debts

TABLE 3.—AVERAGE FINANCIAL CHANGES OF TENURE GROUPS BY SIZE OF FARM BUSINESS, MCHENRY COUNTY, ILLINOIS, 1941

	Productive man-work units ^a							
	Owners and part-owners				Tenants			
	Under 400	400-549	550-699	700 and over	Under 400	400-549	550-699	700 and over
Number of farms.....	16	16	20	14	13	24	21	22
Increased assets.....	\$285	\$1 500	\$1 733	\$2 952	\$527	\$1 047	\$2 029	\$2 298
Decreased liabilities.....	261	591	389	675	234 ^b	46 ^b	538 ^b	321 ^b
Increased net worth.....	546	2 091	2 122	3 627	293	1 001	1 491	1 977
Percent increase in net worth.....	4.4	12.5	8.9	15.7	11.8	18.8	21.9	24.5
Debt ratio ^c : Total.....	20	28	25	36	19	20	25	19
Short-term.....	18	14	8	19	19	20	25	20
Long-term.....	24	35	33	45	..	..	..	..
New borrowings during year	\$688	\$ 487	\$ 370	\$ 764	\$489	\$ 807	\$1 412	\$1 063
New borrowings remaining unpaid at end of year..	521	418	295	475	383	581	1 200	894
Percent of new borrowings unpaid.....	76	86	80	62	78	72	85	84
Gross repayments.....	\$949	\$1 078	\$ 759	\$1 439	\$255	\$ 761	\$ 874	\$ 742
Paid on old debts ^d	782	1 009	684	1 150	149	535	662	573
Percent of total old debts paid ^d	25.6	18.2	9.7	10.6	29.0	51.0	37.8	39.2

^aSize of business is measured by productive man-work units. A productive man-work unit is a 10-hour working-day standard applied to each kind of crop and type of productive livestock. These standards are based upon detailed records of labor requirements for each type of productive farm enterprise.

^bIncrease.

^cThis refers to the percent that a specified class of debts is of a specified class of assets.

^dDebts outstanding at the beginning of the year.

during the year; in fact, the no-debt owners (at the beginning of the year) actually incurred some debts during the year. With these tendencies, it is obvious that among the owners, as debt ratios were higher, net worths increased. On a percentage basis, this increase was 4.1 percent for the no-debt owners and 17.6 percent for owners with debt ratios of 40 percent or higher. Among the tenants these relationships were not consistent.

Borrowings and repayments. Among the owners, new borrowings were largely confined to those whose debts were over 20 percent of their assets, but borrowing was general among all groups of tenants, even among those who had no debts at the beginning of the year. There were no consistent differences among the groups in percent of debts repaid.

Size of Farm Business

In Table 3 these same data are shown for the tenure groups classified by size of farm business as measured by productive man-work units.

Changes in net worth. Among owners, as the size of farm business increased, assets increased more, liabilities decreased more, and the net worth averaged progressively higher. The 16 owners with less than 400 p.m.w.u. averaged an increase in net worth of \$546, or 4.4 percent, while the 14 owners with 700 p.m.w.u. or more averaged an increase in net worth of \$3,627, or 15.7 percent. Among tenants, these same relationships held true except for the change in liabilities. These results indicate that the size of farm business was important in getting larger increases in net worth with conditions as they were in 1941. Tenants in general were increasing their borrowings to acquire added capital, because it was more profitable; owners were finding it possible to repay their debts as well as to increase their assets.

Debt ratios. There was some tendency for owners with larger sized farms to have a higher debt ratio, but this was not true for tenants. Apparently other factors than the percent of capital borrowed are related to the size of farm business.

Borrowings and repayments. Owners show no consistent relationships between new borrowings and the size of farm business. There was some indication that tenants with 550 and more p.m.w.u. borrowed more capital than tenants on smaller farms. Owners on small farms repaid a higher percentage of their old indebtedness than did owners on larger farms; there was no consistent relationship for tenants.

Comparisons with 1940

Farmers used more credit in this area in 1941 than in 1940. Operators on 101 identical farms borrowed an average of \$488 in 1940 and \$720 in 1941. This increase was used chiefly to increase the number of dairy cattle and for machinery and equipment. Total debts on these farms were increased by 1.2 percent in 1940 and decreased by 6.1 percent in 1941. Long-term debts were decreased in both years; shorter-term debts were increased by 12.6 percent in 1940 and were decreased by 7.5 percent in 1941.

Summary

1. The frequency and extent of borrowing, even for high debt-ratio groups, indicate no shortage of credit for increasing working capital on operating farms in this area.

2. In 1940 and 1941 the capital acquired by borrowing increased net earnings. This is characteristic of periods when farming is profitable.

3. Capital accumulation was much greater—both absolutely and relatively—on larger than on smaller farms.

B. D. PARRISH and L. J. NORTON

THE PROPER ORGANIZATION AND METHOD OF LEADERSHIP SELECTION

This is a report of a reconnaissance study of farmer opinions in Shelby County, Illinois, May, 1942. The principal object was to determine the best method of promoting the Extension Service war program.

The Extension Service in Agriculture and Home Economics of the University of Illinois, in being charged with the task of contacting every farm family in the state with an educational program dealing with war problems affecting agriculture and rural life, is facing one of the biggest responsibilities and one of the greatest opportunities of its entire history.

Realizing that the success of the system proposed to accomplish this task will depend on the efforts of local people, the authors of this report made a short reconnaissance survey in connection with a study of neighborhoods and communities in Shelby County during the week of May 11 to 16, 1942. Thirty-three farmers and homemakers, selected as being representative of the county from a geographical, economic, and social point of view, were interviewed.

Four questions were discussed with those interviewed: (1) The need for and importance of an arrangement to provide an educational program on war efforts affecting farmers which would reach every farm family; (2) the proper geographical unit to be used in such an arrangement; (3) the proper method of selecting leaders; and (4) the function of local leaders. The report which follows is an interpretation of the results of the interviews.

The need for an educational program. Most farmers and homemakers agreed that an educational program to help farm people meet war needs would be beneficial to them. Discussion of the value of such a program led to the belief that *complacency, inertia, ignorance, and disinterest on the part of many farm people will present serious problems in putting the program into operation.*

The best basic unit for organization purposes. The school district was generally regarded by most as the best organizational unit. Its boundaries are definite and known; the people are accustomed to meet at the schoolhouse, which is, as a rule, conveniently located; the school district is the "neighborhood" for most people of the area; and recent experiences in the scrap-iron, war bond, and sugar rationing drives have made the residents "district conscious" again.

Two disadvantages were reported: (1) People living near the boundary lines may be nearer to another schoolhouse or have ties with families in another district; and (2) school district conflicts or differences of the past might be carried over by some into other situations.

The second must be seriously considered whenever it exists. Many of those interviewed made the suggestion that some provision be made to permit a family to "join" the school district of its preference, provided it agrees to "stay" with that district for the purpose of the program.

The problem of leadership selection. Suggestions for the selection of leaders varied from appointment by farm and home advisers to election by local people at a district meeting. The fact was stressed that the leader must be well liked by all persons under his leadership, that he must have their good will and confidence, and that his judgment must be respected. Since the farm bureau and the home bureau are synonymous with the Extension Service in the minds of many local people, especially non-members of these organizations, one of the problems will be to find leaders who will be acceptable to both members and non-members.

Religious differences must also be recognized in the selection of leaders, especially in those areas in which a close-knit religious group is located. In such areas, leaders must be selected from both inside and outside such groups in order to get full cooperation in the program. Leaders who can get the job done will, in most cases, be persons who have been leaders in other activities.

The function of the local leader. Few suggestions were obtained on how the local leader should function, even from those with previous leadership experience. Here again, impressions of inertia, ignorance, disinterest, and reluctance to grapple with new problems were given, even on the part of some regarded as leaders. Lack of knowledge of the work to be done or the way it was to be done may have been responsible in part.

One suggestion regarding the function of leaders was that they should have a general or over-all interest instead of being engrossed in some specialty. The leader not only should be willing and able to make personal contacts, but should be able to work with the group (preside at the meeting, delegate responsibility, get others to cooperate, and have other abilities needed for group leadership).

Summary and conclusions. (1) If the educational program is to be carried to every farm family, the system of organization developed must be used only for important purposes connected with the war efforts and activities must be carefully scrutinized to avoid loading the leaders with detailed or useless tasks.

(2) Non-members of the farm bureau and the home bureau should not be given the impression that the new program is a roundabout way to increase membership in these organizations.

(3) The start of the program will have much to do with its success. A good choice of leader, pro-tem or permanent, in the township or the school district and the manner in which the purpose of the program is explained will, in the main, determine whether local people will be interested and willing to cooperate. The organization should not be completed too far in advance of the time it is to be used.

(4) Recent efforts to organize in school districts for various war purposes have in most cases proved successful, both in getting the job done and in leaving with the people a wholesome feeling of their necessity and importance. Many of the best leaders have been used in these efforts. To ignore these leaders, some of whom are appointed for the duration of the war, would be a serious mistake; their passive resistance or even active antagonism might thus be engendered. To recognize them would not mean that they would take the leadership in the new program, for it is desirable that overloading be avoided, but their counsel and guidance should be sought, at least.

(5) The ability to hold people together and to get their cooperation should be a major qualification for leaders, rather than their social or economic success or their specialized knowledge of farm or home life.

(6) Emphasis should be placed upon the fact that the new program offers a two-way possibility for farm people to make their needs and wants known, as well as to receive reliable and useful information. Local people should be impressed with the need for making the program their own.

(7) Local differences in organizational structure and availability of potential leadership are of real significance and should be considered in the development of any plan for contacting all farm families.

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H. P. Risk

Director, Extension Service of
University of Illinois

U. I. E.—Cooperative Agricultural Extension
Work—About May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁵	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁶	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period....	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	110	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	84	68	75
1932	65	48	41	69	43	43	62	66	47	58
1933	66	51	45	71	49	51	72	62	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	78	74	87
1936	81	81	86	80	74	82	103	80	86	103
1937	86	86	96	84	80	87	103	98	102	113
1938	79	69	69	80	72	81	101	92	78	89
1939	77	65	65	78	72	81	97	99	92	108
1940	78	68	69	79	78	90	113	106	105	123
1941	87	82	87	85	101	116	136	129	149	155
1941 May.....	85	76	83	81	97	108	133	127	144	154
June.....	87	82	87	83	96	105	126	130	152	159
July.....	89	86	91	84	98	103	123	131	153	160
Aug.....	90	87	92	86	102	111	129	135	158	160
Sept.....	92	91	99	88	110	123	140	134	163	161
Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	135	165	166
Dec.....	94	95	99	92	134	162	176	139	170	167
1942 Jan.....	96	100	104	94	132	145	154	143	173	171
Feb.....	97	101	106	95	127	133	140	147	178	172
Mar.....	98	103	108	97	127	....	....	....	183	172
Apr.....	99	104	111	98	....	....	....	....	....	174
May.....	99 ¹¹	105 ¹¹	112 ¹¹	....	....	....	....	....	....	....

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			May 1941	Current months		
	1924-29	1940	1941		March	April	May
Corn, shelled	\$.81	\$.56	\$.63	\$.66	\$.75	\$.76	\$.78
Oats, shelled	.42	.32	.36	.34	.52	.52	.52
Wheat, shelled	1.30	.81	.93	.88	1.17	1.10	1.10
Barley, hulls	.66	.46	.55	.50	.75	.78	.78
Soybeans, hulls	1.94	.82	1.24	1.20	1.79	1.73	1.68
Flax, seed	9.97	5.54	9.37	8.40	12.80	13.70	13.40
Hay, medium, cut	8.57	8.84	10.07	9.60	11.30	11.90	11.90
Hay, fine, cut	11.00	8.52	9.85	10.00	10.80	11.40	12.20
Milk, whole, condensed	18.00	65.00	80.00	75.00	99.00	100.00	100.00
Vegetables, mixed	11.27	9.63	11.19	10.50	13.30	13.50	13.40
Summer crop	6.52	3.41	4.43	4.90	5.60	6.00	6.10
Winter crop	.42	.27	.33	.34	.31	.36	.37
Milk, 1940	2.00	1.67	2.05	1.85	2.30	2.20	2.20
Hay, 1940	.30	.17	.22	.19	.25	.25	.26
Corn, 1940	.91	.13	.15	.16	.18	.19	.19
Wheat, 1940	.36	.30	.37	.40	.40	.41	.43
Apples, 1940	1.89	1.14	1.07	1.20	1.65	1.65	2.10
Hay, 1940	13.88	6.68	8.49	8.30	12.70	13.00	12.60
Produce, 1940	1.39	.83	.82	.75	1.25	1.40	1.60

For sources of data in tables see previous issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Risk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

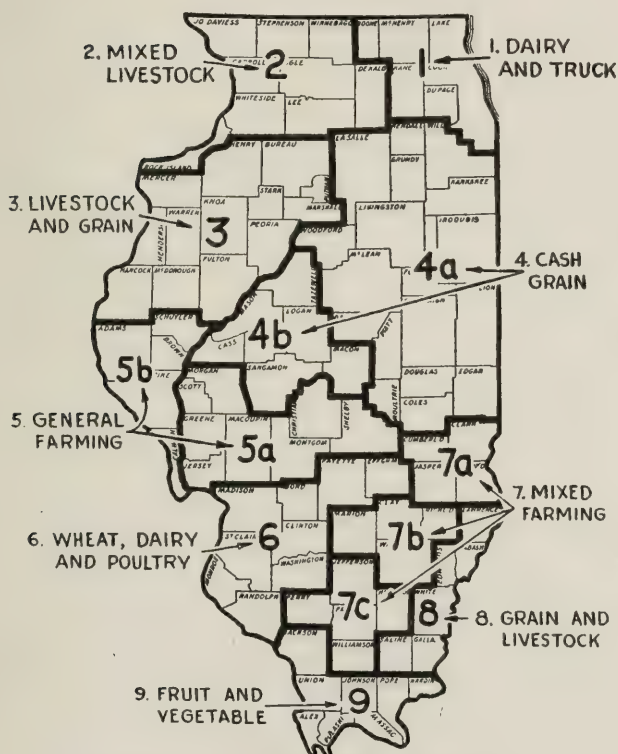
College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

July, 1942

Number 86

Summary of Annual Farm Business Reports of 3,090 Illinois Farms For the Year 1941



THE NINE MAJOR TYPE-OF-FARMING
AREAS IN ILLINOIS

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

FOREWORD

This issue of *Illinois Farm Economics* is devoted to an analysis of 3,090 farm records which were kept throughout Illinois during 1941. It also includes some comparisons of earnings for 1941 with those of previous years.

Illinois farmers have cooperated with the University of Illinois in keeping financial and production records of their farms for more than 25 years. These records have become more useful as more and more farmers have kept them and as they have been continued over a longer period of years. The greater value from these records is that of helping farmers who keep them to study their own business. As the records are kept over a period of years, they provide a basis for making changes which will improve the farm earnings and enable each individual to compare his farming operations with those of others who are farming under similar conditions.

Another value of the records is that of studying farm earnings from year to year on the same or similar farms as a means of showing the year-to-year changes in the financial condition of farmers. A comparison of the prices of things farmers buy and sell helps to accomplish this purpose, but farming is so complex, with the sources of income and the character of expenses varying widely on farms of different types, that farm records provide the most satisfactory basis for such comparisons.

A third value to be gained from the records is that of showing how the investments, incomes, expenses, earnings, yields, and sources of income vary in different parts of the state due to such factors as soil differences, size of farms, type of farming, climatic conditions, and available markets. The records also show the influence of variations within type-of-farming areas in quality of soil, size of farm, and type of organization on crop yields, capital investments, and earnings.

The Illinois Farm Account Book, if properly used, contains all of the information needed to file an income tax report on the farm business on either the cash or the accrual basis. The record when summarized provides totals which may be transferred to the tax form with a minimum of time and effort.

H. C. M. CASE

SUMMARY OF FARM BUSINESS REPORTS OF 3,090 FARMS IN ILLINOIS FOR 1941

P. E. JOHNSTON, J. B. CUNNINGHAM, AND M. L. MOSHER

The average net cash income an acre for Illinois accounting farms was higher in 1941 than in any other year since World War I. The average net cash income of \$9.91 an acre for 1941 compared with \$6.82 for 1940, \$7.40 for 1936, \$7.78 for 1929, and an average of \$5.30 for the years 1934, 1935, 1937, 1938, and 1939, a group of years when earnings were practically the same (Fig. 1).

The average cash income an acre for Illinois accounting farms was as follows for the successive years 1927-1941:

1927.....\$5.80	1932.....\$1.47	1937.....\$5.33
1928.....6.22	1933.....3.00	1938.....5.25
1929.....7.78	1934.....5.40	1939.....5.40
1930.....6.22	1935.....5.14	1940.....6.82
1931.....2.69	1936.....7.40	1941.....9.91

The net cash income an acre was computed by subtracting the value of unpaid labor from the cash balance for the year and by dividing that difference by the number of acres on the farms. In order to calculate the state averages, farming-type area averages were weighted by the acres of land in the farms (census) in each farming-type area.

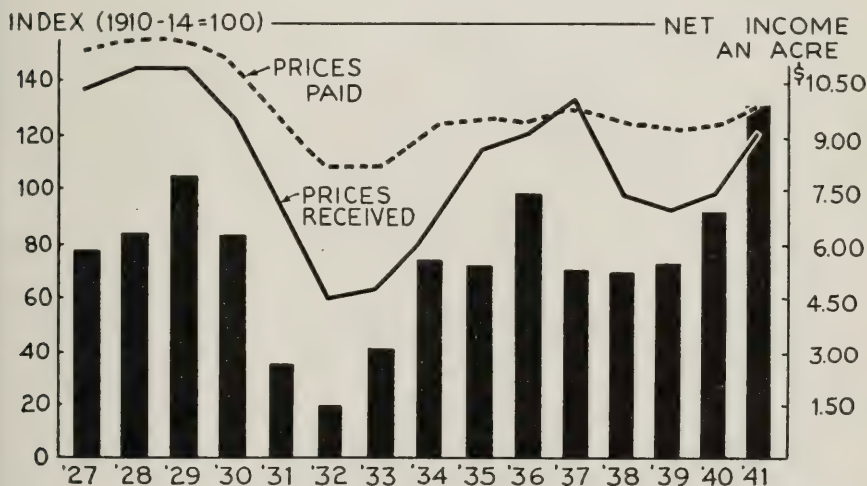


FIG. 1.—AVERAGE NET CASH INCOME AN ACRE (UNPAID LABOR DEDUCTED) ON ILLINOIS ACCOUNTING FARMS, PRICES PAID BY FARMERS IN THE UNITED STATES, AND PRICES RECEIVED BY ILLINOIS FARMERS, 1927-1941

These returns do not include the inventory changes or the money value of food, fuel, and other items of living, all of which are secured from the farm. The net cash income an acre is one of the best measures for comparing incomes of groups of farms over a period of years, or for contrasting the level of income for different type-of-farming areas, because it is not influenced by changes in the inventory of land. During any period of years, earnings fluctuate more widely from year to year when inventory changes are included, since there are usually inventory losses when prices are declining and inventory increases when prices are rising.

Effect of large production and high prices on earnings. Farm incomes were much higher in 1941 than in 1936 or 1937, years in which price ratios were more favorable to farmers than in 1941. In 1936, the ratio of prices received by Illinois farmers to prices paid for supplies was 97 percent of the 1910-1914 ratio, and in 1937, it was 102 percent (Fig. 1). In 1941, Illinois farm prices advanced more than the prices paid, and the ratio which averaged 79 in 1940 advanced to an average of 93 in 1941.

Why, then, should the net income an acre be so much larger in 1941 than in the years when the price ratios were more favorable? The answer is simply that the level of both domestic and foreign demand was high in 1941, and farmers for the first time since World War I were able to sell a large volume of products at high prices.

We have had years of low volume of sales, as 1937, when prices were high but there was little to sell, and we have had years like 1939 when a large volume of products was sold at relatively low prices. The effect of both of these combinations was a fairly low level of farm incomes. In 1936, a fair volume of products was marketed at good prices, but 1941 is the only year since 1920 when a large volume of products was sold for high prices.

The demand for farm products is important in determining price. In 1941, the level of industrial production in the United States was 44 percent above that for 1939 and 38 percent above that for 1937. In addition, lend-lease activities were important in 1941, and large quantities of farm products were taken from the domestic market for shipment abroad. This was particularly true for hogs, eggs, and dairy products. In 1941, the Agricultural Marketing Administration purchased for export the pork from 3.6 million hogs and the lard from 10.2 million hogs.

With a strong domestic demand resulting from the high incomes of

city workers, and with a stronger foreign demand, the large volume of agricultural products was sold at increasing prices. As a result, the average cash income per farm on accounting farms advanced from \$6,334 a farm in 1940 to \$8,002 a farm in 1941. When inventory changes were included, the gross income per farm increased from \$6,875 a farm in 1940 to \$10,084 a farm in 1941, a 47-percent increase.

These data indicate clearly that farm incomes are increased much more by a rise in price which results from an increase in demand than from one which results from a decline in production. This fact should be kept in mind by those who plan agricultural programs which are designed to improve farm incomes.

Volume of production on efficient, large-scale farms. The maximum production of farm products was called for in 1941 and should be continued for the duration of the war. The response of the operators of large-scale, efficient farms is indicated for 1941 by an analysis of 600 central Illinois Farm Bureau Farm Management Service records. The average increase per farm in 1941 over that for 1940 was as follows:

<i>Product</i>	<i>1940 volume</i>	<i>1941 volume</i>	<i>Percentage increase</i>
Pork (pounds).....	33 028	38 066	15
Beef (pounds).....	18 812	20 878	11
Milk (pounds).....	44 427	47 546	7
Eggs (dozens).....	1 068	1 255	18
Grain (tons).....	181	218	20

The production per worker was 112.9 tons of grain and 28.5 tons of livestock and livestock products on these farms in 1941.

A study of 96 representative farms in McHenry County for 1940 and 1941 indicates that the percentage increase in milk production was higher on the large farms than on the small ones. From 1940 to 1941, there was a 2.5-percent increase in milk production on owner-operated and part-owner-operated farms with less than 550 man work units per farm, but a 11.2-percent increase on the farms with more than 550 man work units. Tenants with less than 550 man work units per farm increased their milk production 6.7 percent, while tenants on larger farms increased theirs 17.9 percent.

On an equal number of farms, 84 percent of the total increase in milk production was on the large farms, and only 16 percent on the small ones.¹

Obviously, every farmer, including the operators of small farms,

¹B. D. Parrish and L. J. Norton, *Illinois Farm Economics*, June 1942.

should do his best to increase production during the war period, but those who plan the programs designed to influence production should recognize the fact that a large percentage of the increased production must come from the larger sized family farms that are well equipped with machinery and which have efficient operators.

Accounting farms represent better than average condition. The extent to which the volume of production from accounting farms exceeds that from the average of all farms in each farming-type area is indicated by the following data which give the value of farm products sold, traded, or used by farmers in 1939:

<i>Farming-type areas</i>	<i>Value of products per farm</i>	
	<i>All farms</i>	<i>Accounting farms</i>
1.....	\$2 814	\$4 769
2.....	2 666	6 295
3.....	2 741	7 033
4.....	3 156	6 665
5.....	2 088	5 603
6.....	1 391	3 413
7.....	712	2 821
8.....	1 026	3 131
9.....	787	2 632
Weighted average.....	\$2 174	\$5 220

The following summary is a record of incomes, expenditures, and earnings on Illinois accounting farms for 1941 and is also a record of comparisons of selected items with similar records for other years. *The data contained in this report represent Illinois farm conditions which are better than average because the accounting farms are larger than average, the crop yields are above average, and the farms on the whole are operated with an efficiency which is greater than average.* Records of this type are useful for showing variations in income from year to year and for demonstrating differences between farming-type areas. The variation in income from farm to farm within the groups is shown in Table 3.

Value of farm products used in the household. In the farm business reports published in 1938, 1939, 1940, and 1941, and in the printed tables at the back of this report, the value of farm products used in the household was included as a source of income. In comparing the 1938-1941 records with those for other years, the value of farm products used in the household has been omitted because the data are not available for years prior to 1938. The average values per farm and per acre of farm products used in the household for the various farming-type areas are as follows:

VALUE OF FARM PRODUCTS USED IN HOUSEHOLD, 1939, 1940, AND 1941

Area	Per farm			Per acre		
	1939	1940	1941	1939	1940	1941
Area 1.....	\$241	\$253	\$279	\$1.41	\$1.41	\$1.54
Area 2.....	250	247	276	1.20	1.17	1.33
Area 3.....	260	252	293	1.05	1.01	1.22
Area 4.....	251	236	284	.94	.87	1.07
Area 5.....	256	244	283	.98	.96	1.13
Area 6.....	264	250	282	1.31	1.25	1.32
Area 7.....	254	244	292	1.12	.99	1.18
Area 8.....	239	211	267	1.10	.93	1.21
Area 9.....	229	220	278	1.23	.94	1.20
State average ^a	\$252	\$242	\$284	\$1.09	\$1.02	\$1.20

^aWeighted by the number of census farms in each area.

Cash income per farm. The average cash income and cash expenditures per farm were larger in 1941 than in any year for which comparable records are available (1926).¹

The average cash balance of \$3,019 for 1941 was over three times as large as the average cash balance of \$968 for 1932, the low-income year of the depression (Table 1). The average cash balance for 1941 was \$779 a farm larger than in 1940, but income tax payments must be de-

¹Comparable records are available to 1926 and a limited number, to 1916.

TABLE 1.—SELECTED ITEMS OF INCOME AND EXPENSE ON ACCOUNTING FARMS IN ILLINOIS, 1935-1941^a

Item	1935	1936	1937	1938	1939	1940	1941
Acres per farm.....	216	227	227	232	237	242	239
Cash income per farm.....	\$4 342	\$5 374	\$5 309	\$5 285	\$5 920	\$6 334	\$8 002
Cash expenditures per farm..	2 605	3 034	3 424	3 421	4 001	4 094	4 983
Cash balance.....	\$1 737	\$2 340	\$1 885	\$1 864	\$1 919	\$2 240	\$3 019
Inventory increase.....	779	802	727	428	1 117	541	2 082
Cash balance plus inventory increase.....	\$2 516	\$3 142	\$2 612	\$2 292	\$3 036	\$2 781	\$5 101
Unpaid labor.....	668	740	733	698	696	691	769
Net farm income.....	\$1 848	\$2 402	\$1 879	\$1 594	\$2 340	\$2 090	\$4 332
Gross receipts per acre ^b	\$17.14	\$19.55	\$18.00	\$16.66	\$19.89	\$19.16	\$30.07
Total expense per acre ^c	8.68	9.06	9.86	9.95	10.26	10.47	11.63
Net receipts per acre ^b	\$ 8.46	\$10.49	\$ 8.14	\$ 6.71	\$ 9.63	\$ 8.69	\$18.44
Net receipts per acre (cash basis).....	\$ 5.14	\$ 7.40	\$ 5.33	\$ 5.25	\$ 5.40	\$ 6.82	\$ 9.91

^aIn this table and in succeeding tables where data are on a farm basis rather than on an acre basis, state averages were obtained by weighting area averages by the number of farms in each area.

^bGross receipts include inventory changes.

^cTotal expense includes unpaid labor.

TABLE 2.—CASH FARM BUSINESS EXPENDITURES ON ILLINOIS ACCOUNTING FARMS, 1935-1941

Nature of expenditures	Average per farm							Percent 1941 is of 1940
	1935	1936	1937	1938	1939	1940	1941	
Farm improvements.....	\$ 185	\$ 212	\$ 274	\$ 314	\$ 368	\$ 368	\$ 389	106
Machinery and equipment.....	683	841	956	969	961	1 019	1 335	131
Feed and grain.....	488	612	656	471	634	647	947	146
Crop expense.....	174	205	276	148	144	152	159	105
Hired labor.....	236	261	306	348	371	369	432	117
Taxes.....	206	231	234	256	272	287	294	102
Livestock and miscellaneous.....	633	672	722	915	1 251	1 252	1 427	114
Total cash expenses.....	\$2 605	\$3 034	\$3 424	\$3 421	\$4 001	\$4 094	\$4 983	122

ducted from this sum in order to calculate the increase available for farm family living and savings. The increase in cash available for farm family living was small in 1941 compared with the total increase in farm earnings, since a large proportion of the increased earnings was in inventory increases.

Cash farm business expenditures. Illinois accounting farmers spent more money to run their farms in 1941 than in any year of record (since 1926) and probably established an all-time high because farms are larger now and farmers purchase a higher percentage of the materials used to operate their farms. Expenditures averaged 22 percent larger in 1941 than in 1940 and 91 percent larger in 1941 than in 1935 (Table 2). More money was spent in 1941 than in 1940 for all items, with the largest increases for machinery, feed, labor, and livestock.

The average expenditure per farm of \$4,983 in 1941 may be contrasted with an average expenditure of \$1,494 per farm in 1933, the low point for expenditures in the depression period; this increase of 234 percent indicates the farmers' contribution to the upward trend in the demand for the Nation's goods.

The following percentages indicate the increase in expenditures per farm for 1941 over those for 1933: farm improvements, 318 percent; machinery and equipment, 341 percent; feed and grain, 301 percent; crop expense, 16 percent; hired labor, 163 percent; taxes, 16 percent; and livestock and miscellaneous, 331 percent. These increases reflect changes in the price level, changes in the quantities purchased, and changes in the average size of farm.

Inventory increases. The average inventory increase of \$2,082 for 1941 was almost double that of any other year since 1926. Inventory increases have occurred each year since the depression year of 1932, and these annual increases have ranged from \$428 per farm in 1938 to \$2,082 per farm in 1941. The average annual increase for the 9-year period ending in 1941 was \$829 a farm.

An inventory increase indicates that the combined value of livestock, grain, improvements, and machinery was larger at the end of the year than at the beginning. The ending inventory of each year is for the same farms as the beginning inventory, but the farms included in the averages for one year are not exactly the same as those for any other year because some old cooperators are dropped each year and new ones are added.¹

The series of inventory increases for a period of 9 years reflects the increase in prices for farm products, heavy investments in improvements and machinery, and an accumulation of grain and livestock following the drouth of 1934. Enough money has been spent for machinery and improvements so that the value per farm on January 1, 1941, was 75 percent larger for machinery and 18 percent larger for improvements than it was in 1934. Earnings were larger during the last 9 years if inventory changes are included than if calculations are made on a cash basis. On the other hand, inventory losses averaged \$866 a year for the 3 years, 1930-1932. The cash basis more nearly reflects the ability of the farmer to pay his interest, to buy the things that the family needs, and to add something to the savings than does the method of accounting which includes inventory changes. Inventory changes must be included, however, in order to find the net position of the farm business for the year.

Variations in earnings from farm to farm. Earnings for the farms included in each area vary widely. Much of the farm-to-farm variation is due to the managerial ability of the operators and to the manner in which the farms are organized and operated. The records were grouped for this study into high-, medium-, and low-income farms on the basis of the rate earned on investment. The value of farm products used in the household was included as a farm receipt in this tabulation.² The wide variation in rate earned on investment, net earnings per farm, and labor and management earnings indicates the opportunities which some farmers have for improving the income from their farms because these variations are largely due to factors over which the operator has some control (Table 3).

¹A high percentage of the cooperators for one year continues for the next.

²The records for Grundy, LaSalle, Livingston, McLean, Tazewell, and Woodford counties were not available when the averages for Area 4 were calculated.

TABLE 3. VARIATIONS IN EARNINGS FROM FARM TO FARM BY FARMING-TYPE AREAS, 1941^a

Farming-type area	Level of earnings	Number of farms	Average rate earned on investment	Net earnings per farm	Labor and management earnings
	(rate earned on investment)		(percent)		(per farm)
1	Less than 10.00.....	16	7.6	\$2 330	\$1 304
	10.00 to 15.99.....	37	13.2	4 352	3 300
	16.00 or more.....	32	19.0	5 312	4 563
2	Less than 14.00.....	214	10.6	\$3 931	\$2 685
	14.00 to 17.99.....	132	16.0	5 461	4 371
	18.00 or more.....	170	21.2	6 201	5 363
3	Less than 14.00.....	199	11.2	\$4 355	\$2 994
	14.00 to 17.99.....	196	16.0	6 444	5 030
	18.00 or more.....	199	21.4	7 205	6 123
4	Less than 14.00.....	346	11.0	\$4 475	\$3 034
	14.00 to 17.99.....	223	15.8	7 183	5 494
	18.00 or more.....	134	20.6	8 042	6 718
5	Less than 14.00.....	121	10.2	\$2 863	\$2 055
	14.00 to 18.99.....	123	16.6	4 771	3 918
	19.00 or more.....	118	22.9	6 211	5 474
6	Less than 10.00.....	115	6.1	\$1 176	\$ 697
	10.00 to 14.99.....	103	12.6	2 342	1 889
	15.00 or more.....	89	19.7	3 315	2 976
7	Less than 10.00.....	39	5.4	\$ 699	\$ 487
	10.00 to 14.99.....	34	12.1	1 615	1 385
	15.00 or more.....	48	19.7	3 066	2 798
8	Less than 12.00.....	25	7.5	\$1 036	\$ 758
	12.00 to 19.99.....	37	15.9	2 493	2 206
	20.00 or more.....	18	23.3	3 898	3 551
9	Less than 6.00.....	10	2.2	\$ 288	\$ 115
	6.00 to 13.99.....	14	9.8	1 318	1 053
	14.00 or more.....	10	18.3	1 908	1 872

^aFor a more detailed analysis of variation in earnings, see the 1941 reports for each area.

Influence of Price Changes on Illinois Farm Incomes

Prices of important farm products. Prices of most farm products were higher at the end of 1941 than at the beginning, horses and butterfat being exceptions. The index of all Illinois farm prices averaged 26 percent higher in 1941 than in 1940. The increases for the various groups were as follows: grains, 14 percent; dairy products, 25 percent; meat animals, 39 percent; and chickens and eggs, 26 percent. Fruits decreased 6 percent because of increased competition from citrus fruits and a loss of export demand.

A great deal of the variation in earnings between the different types of farming in Illinois is due to the constantly shifting ratios between the prices of various livestock products and between those of livestock products and grains. During 1941, the price of beef cattle was high, but the price of hogs practically doubled during the year (Fig. 2). In 1941, 14.9 bushels of corn equaled in value 100 pounds of live hog compared

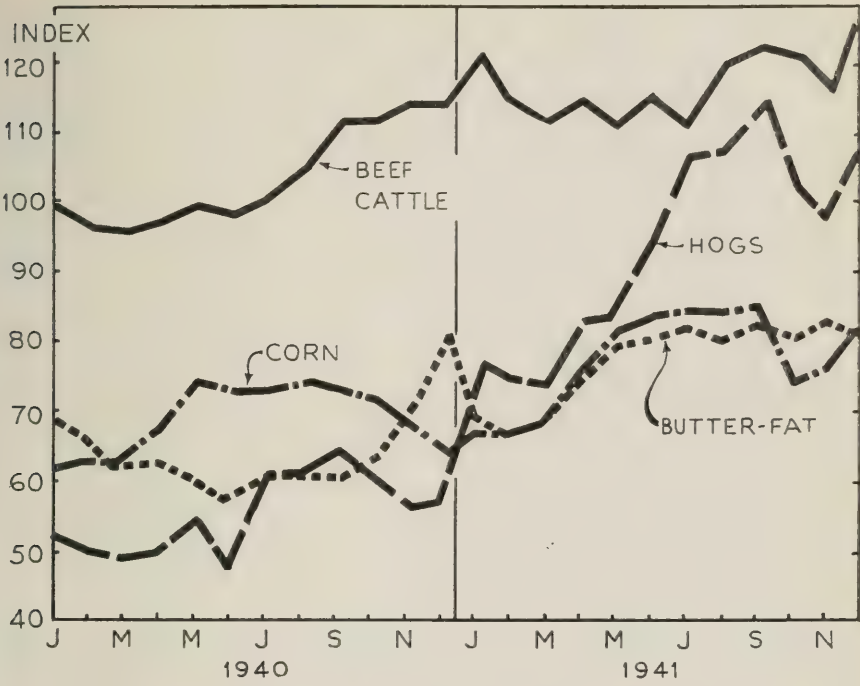


FIG. 2.—INDEXES OF THE AVERAGE MONTHLY ILLINOIS FARM PRICES OF CORN, HOGS, BUTTERFAT, AND BEEF CATTLE, 1940 AND 1941. (1924-1929 = 100)

with an average of 9.9 bushels in 1940. Earnings on hog farms increased in relation to other types of farms, and hog production expanded to record levels.

Farm product	December 15 farm prices		Average yearly farm prices	
	1940	1941	1940	1941
Corn, bu.....	\$.52	\$.66	\$.56	\$.63
Wheat, bu.....	.79	1.14	.81	.93
Oats, bu.....	.33	.47	.32	.36
Barley, bu.....	.49	.70	.46	.55
Soybeans, bu.....	.81	1.48	.82	1.24
Hay, ton.....	7.30	11.40	6.68	8.49
Horses, head.....	74.00	69.00	77.00	68.00
Hogs, cwt.....	5.80	10.70	5.54	9.37
Beef cattle, cwt.....	9.80	10.80	8.84	10.07
Lambs, cwt.....	8.80	10.60	8.52	9.85
Milk cows, head.....	68.00	91.00	65.00	80.00
Milk, cwt.....	2.00	2.50	1.67	2.05
Butterfat, lb.....	.34	.34	.27	.33
Chickens, lb.....	.13	.15	.13	.15
Eggs, doz.....	.27	.32	.17	.22

Variations in supplies. Prices of farm products at inventory time influence farm earnings because all feed, grain, livestock, and other farm property must be valued at the beginning and at the end of the year. The influence is greatest where large stocks are on hand at inventory time. Abundant feed supplies and increasing inventories have characterized the years since the drouth year of 1936. In 1941, the high crop yield resulted in large inventories of feed on most farms. There was an average inventory per farm of 2,942 bushels of corn and 757 bushels of oats on accounting farms on January 1, 1942. This was 357 bushels more corn per farm and 9 bushels more oats per farm than a year earlier. For the state as a whole, the corn reserves on January 1, 1942, were larger than they had been a year earlier. According to the Division of Agricultural Statistics at Springfield, the supplies of the four major grain crops on Illinois farms on January 1, 1941 and 1942 were as follows:

<i>Type of grain</i>	1941 (million bushels)	1942
Corn.....	277	333
Oats.....	95	99
Wheat.....	8	9
Soybeans.....	17	17

Livestock numbers increased rapidly on accounting farms in 1941. The following data indicate the percentage increase in livestock numbers of 3,379 accounting farms during the calendar year 1941:

<i>Type of livestock</i>	1941 (percent of increase)	<i>Type of livestock</i>	1941 (percent of increase)
Milk cows.....	4	Brood sows.....	24
Beef cows.....	14	Spring pigs.....	4
Feeder cattle.....	0	Summer pigs.....	13
Feeder lambs.....	25	Fall pigs.....	23

In 1941, 13.7 litters were farrowed per farm on accounting farms, compared with 12.7 litters in 1940 and 12.0 litters in 1939. All of the increase in 1941 over 1940 was in summer and fall litters.

The increase in milk cows, beef cows, and hogs was general throughout the United States. All cattle numbers and sheep numbers were at record levels on January 1, 1942, and the production of hogs will reach an all-time high this year.

Crop yields in Illinois, 1941. The year 1941 was the fifth consecutive year of high crop yields in Illinois. The weighted average yield of corn, oats, wheat, and soybeans for 1941 was 130 percent of the 10-year average, 1931-1940 (Fig. 3).

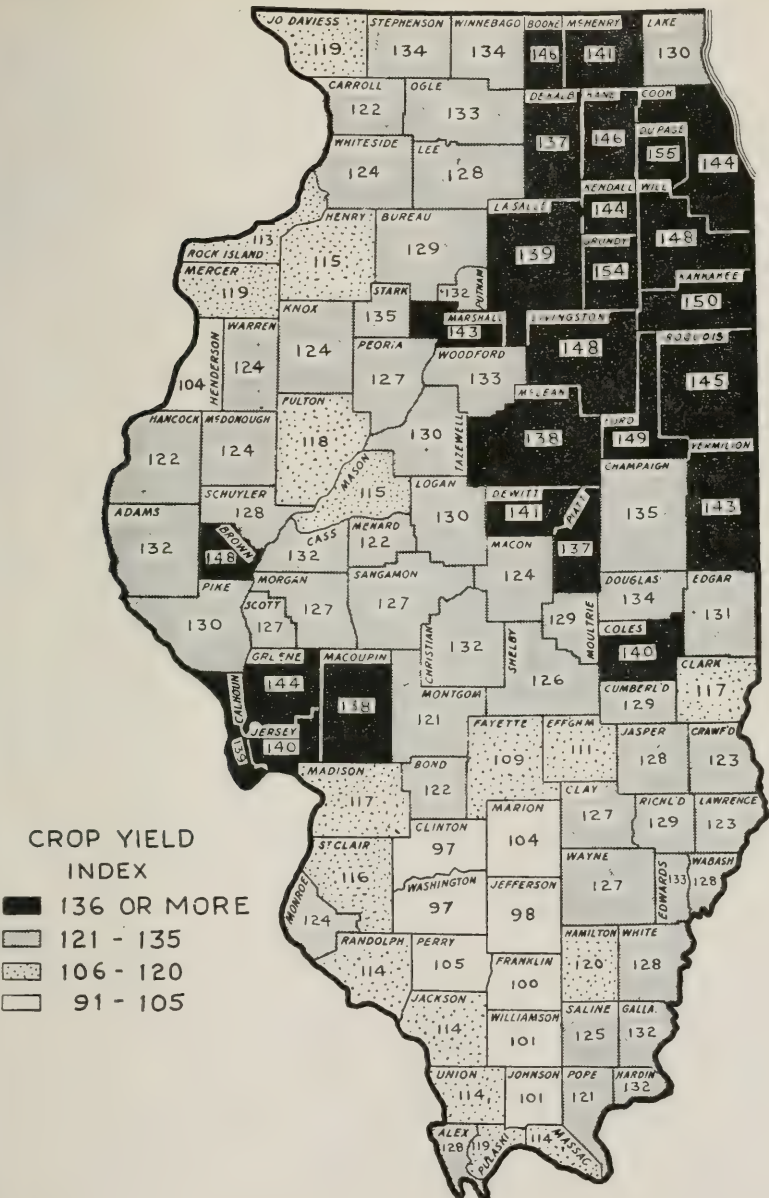


FIG. 3.—Crop Yields for 1941 Compared with 10-Year Average Yields (1931-1940) for the Same County. The Indexes are Based on County Yields of Corn, Oats, Wheat, and Soybeans, (Data from Illinois Cooperative Crop Reporting Service)

The 1941 yields of these four crops, as expressed in percentages of the 1931-1940 averages, follow: corn, 138; oats, 136; wheat, 108; and soybeans, 112. In 1941, corn yields were higher than the average of the 10 years in each of the counties of the state except Marion, Jackson, Johnson, Perry, Williamson, Franklin, and Jefferson; oat yields were higher in each of the counties except Rock Island, Henderson, and Union; wheat yields were below average in 27 counties; and soybean yields were below the average in 19 counties.

The counties with the highest crop yields were located, for the most part, in the east half of northern Illinois where weather conditions were particularly favorable for the small-grain crops as well as for the corn crop. Another group of counties north of St. Louis in Area 5 had exceptionally high yields. On the other hand, the counties with the lowest crop yields were located in the south-central area of the state.

Variations in net cash income an acre. The average net cash income an acre for Illinois accounting farms in 1941 varied from \$2.99 in Area 7 to \$13.28 in Area 4 (Table 4). Net cash incomes were higher in 1941 than in 1940 in all areas. The largest percentage increase for 1941 over 1940 was for Area 5, and the smallest percentage increase was for Area 6. Crop yields in both 1940 and 1941 were relatively better in Area 5 than in Area 6, and the price of hogs advanced more rapidly in 1941 than the prices of wheat and dairy products. Hogs are a more important source of income in Area 5 than in Area 6, whereas wheat and dairy products are of more importance in Area 6 than in Area 5.

TABLE 4.—NET CASH INCOME AN ACRE FOR ILLINOIS ACCOUNTING FARMS BY FARMING-TYPE AREAS FOR THE PERIODS 1925-1929 AND 1930-1934 AND FOR THE YEARS 1937, 1938, 1939, 1940, AND 1941

Farming-type areas	1925- 1929	1930- 1934	1937	1938	1939	1940	1941
Area 1, Chicago Dairy	\$9.59	\$5.25	\$7.76	\$4.97	\$4.04	\$8.66	\$9.05
Area 2, Northwestern Mixed Live- stock ^a	7.94	4.92	7.30	6.16	5.76	8.71	12.01
Area 3, Western Livestock and Grains	9.05	4.86	6.12	6.88	6.83	8.01	12.49
Area 4, East Central Cash Grain ^a	8.91	4.46	6.26	6.69	7.08	9.02	13.28
Area 5, West-Central General Farming	6.35	3.23	4.72	4.64	4.55	4.68	8.30
Area 6, St. Louis Dairy and Wheat	3.26	2.03	3.29	2.84	3.69	4.34	4.82
Area 7, South-Central Mixed Farming	2.21	.91	1.28	1.41	1.39	1.81	2.99
Area 8, Wabash Valley Grain and Livestock	4.57	1.73	4.11	2.63	4.19	3.11	3.82
State Average (weighted by acres in each area)	\$7.13	\$3.74	\$5.33	\$5.25	\$5.40	\$6.82	\$9.91

^aThese areas include records from the Farm Bureau Farm Management Service for 1938, 1939, 1940, and 1941.

TABLE 5.—INVENTORY INCREASES BY FARMING-TYPE AREAS, 1941

Farming-type areas	Livestock	Feed and grain	Machinery	Improvements	Total
Area 1.....	\$ 845	\$ 962	\$402	\$204	\$2 413
Area 2.....	1 043	882	254	95	2 274
Area 3.....	1 338	1 023	286	51	2 698
Area 4.....	906	1 539	275	81	2 801
Area 5.....	930	940	296	75	2 241
Area 6.....	333	275	205	66	879
Area 7.....	325	353	126	61	865
Area 8.....	476	496	200	69	1 241
Weighted average.....	\$ 814	\$ 935	\$253	\$ 80	\$2 082

Inventory changes by farming-type areas. The average inventory increased \$2,082 a farm in 1941. This amount included inventory increases for all the areas and for all the items (Table 5). The inventory increases were largest for feed and grain but were almost as large for livestock, the two items combined accounting for 84 percent of the total inventory increase. The inventory increases for both grains and livestock were the result of increased supplies on hand and higher prices (Table 6).

Inventory increases were larger in 1941 than in 1940 for livestock, feed and grain, and machinery. The inventory increase per farm for machinery was 75 percent higher in 1941 than in 1935. The increase in inventory of \$253 a farm in 1941 for machinery and \$80 a farm for improvements indicates that farmers were still adding to their equipment, as they had been doing each year since 1935 when earnings reached a level which encouraged the purchase of new equipment.

Variations in net income an acre with inventory changes included. When inventory changes were included, the average net income an acre on Illinois accounting farms was 109 percent higher in 1941 than in 1940 (Table 7). This increase of 109 percent with inventories

TABLE 6.—BUSHELS OF CORN AND OATS IN INVENTORIES ON ACCOUNTING FARMS BY FARMING-TYPE AREAS, JANUARY 1, 1941 AND 1942

Farming-type areas	Corn		Oats	
	Jan. 1, 1941	Jan. 1, 1942	Jan. 1, 1941	Jan. 1, 1942
Area 1.....	1 808	2 373	959	965
Area 2.....	2 511	2 840	1 163	1 069
Area 3.....	3 658	3 894	829	839
Area 4.....	4 190	4 828	1 168	1 145
Area 5.....	2 205	2 624	501	534
Area 6.....	1 010	965	362	377
Area 7.....	933	1 029	191	270
Area 8.....	1 067	1 454	209	317
Weighted average.....	2 585	2 942	748	757

TABLE 7.—NET INCOME AN ACRE (INVENTORY BASIS) FOR ILLINOIS ACCOUNTING FARMS BY FARMING-TYPE AREAS FOR THE PERIODS 1925-1929 AND 1930-1934 AND FOR THE YEARS 1937, 1938, 1939, 1940, AND 1941

Farming-type areas	1925-1929	1930-1934	1937	1938	1939	1940	1941
Area 1, Chicago Dairy	\$11.04	\$ 2.64	\$ 8.69	\$ 8.12	\$ 9.23	\$13.50	\$22.35
Area 2, Northwestern Mixed Livestock ^a	15.11	2.70	8.46	8.34	11.45	12.34	23.02
Area 3, Western Livestock and Grain ^a	10.24	2.84	10.83	9.24	13.01	10.66	23.70
Area 4, East-Central Cash Grain ^a	10.30	2.76	10.30	8.66	13.42	9.99	23.85
Area 5, West-Central General Farming	7.69	1.99	8.21	6.78	8.79	8.08	17.26
Area 6, St. Louis Dairy and Wheat	5.41	.92	6.17	3.71	6.65	6.90	8.95
Area 7, South-Central Mixed Farming	3.34	.55	3.48	2.47	3.18	3.36	6.49
Area 8, Wabash Valley Grain and Livestock	5.34	1.20	6.12	3.31	5.04	5.22	9.44
State Average (weighted by acres in each area)	\$ 8.59	\$ 2.20	\$ 8.58	\$ 7.14	\$10.33	\$ 9.09	\$18.99

^aFor these areas, records from the Farm Bureau Farm Management Service are included for 1938-1941. The value of farm products used in the household was excluded.

included is in contrast with a 45-percent increase on the cash basis. The net income an acre for 1941 was \$9.08 larger on the inventory basis than on the cash basis; in other words, half of the net income for 1941 was an inventory increase. Incomes have been larger on the inventory basis than on the cash basis for all years since 1925, with the exceptions of 1930, 1931, and 1932.

Net incomes an acre, on the inventory basis, were higher in 1941 than in 1940 in all areas of the state. The range in net income per acre was from \$6.49 in Area 7 to \$23.85 in Area 4.

Income from agricultural conservation payments. Cash farm incomes of accounting farmers in 1941 included government payments

TABLE 8. PERCENT OF ILLINOIS ACCOUNTING FARMERS RECEIVING AGRICULTURAL CONSERVATION PAYMENTS IN 1941 AND THE PAYMENTS PER FARM AND PER ACRE BY FARMING-TYPE AREAS

Area	Number of farms	Acres per farm	Percent of farms receiving payments	Payments per farm, all farms	Payments per farm, cooperating farms	Payments per acre, cooperating farms	Taxes per acre, all farms
Area 1	85	181	79	\$275	\$348	\$1.92	\$1.40
Area 2	516	208	80	391	486	2.34	1.35
Area 3	594	241	86	518	600	2.49	1.42
Area 4	991	265	88	576	658	2.48	1.54
Area 5	362	250	77	333	430	1.72	1.18
Area 6	307	213	63	131	209	.98	.85
Area 7	121	247	77	168	219	.89	.66
Area 8	80	221	72	184	254	1.15	.93
Area 9	34	232	68	137	203	.88	.69

which were received during the accounting year for participation in agricultural conservation programs. In a few cases, delayed payments for 1940, as well as payments for 1941, were included. Of the 991 farms in Area 4, 88 percent received payments (Table 8).

The percent of farms receiving payments in other areas ranged down to 63 in Area 6. The largest payments per farm and per acre were in the areas with the highest investments an acre, Areas 2, 3, and 4. In all the areas, the payments an acre far exceeded the taxes an acre.

Standards for Measuring Operating Efficiency

Farm account studies have repeatedly shown the principal factors affecting relative earnings to be land use, crop yields, amount of livestock, livestock efficiency, labor cost, machinery cost, and prices received for things sold. They have also shown the following facts: (1) that the quality of land affects the cropping system and the crop yields; (2) that the kind of livestock influences the kinds and amounts of feed fed as well as the returns for feed fed; (3) that the size and intensity of the farm business affects practically all the cost items; and (4) that price relationships and quantities of products produced affect the relative profitability of various types of farming for any particular year.

With the foregoing facts in mind, 2,175 farms in Areas 2, 3, 4, and 5 were sorted into groups as indicated in Figures 4, 5, and 6 and in Tables 9 and 10. Similar figures and tables for each of the nine major type-of-farming areas of the state can be found in the area reports for 1941. These reports are available upon request and may be used by any farmer who keeps records to analyze his efficiency.

The terms used in the various figures and tables are the same as those used in the *Illinois Farm Account Book*. For example, "improved land," a term that is used in Figure 4, means tillable land and land occupied by farmstead, roads, and orchards.

Crop yields. Figure 4 shows the effect of quality of land (expressed as value an acre) on yields of corn, oats, wheat, and soybeans. Land valued at \$40 an acre produced about 52 bushels of corn, 37 bushels of oats, 19 bushels of wheat, and 15 bushels of soybeans; land valued at \$140 an acre produced about 73 bushels of corn, 48 bushels of oats, 24 bushels of wheat, and 28 bushels of soybeans. The differences in acre-yields between \$40 land and \$140 land are as follows: corn, 21 bushels; oats, 11 bushels; wheat, 5 bushels; and soybeans, 13 bushels.

Such variations are significant, but the fact should be kept in mind that they apply only to the conditions which prevailed in 1941. Wheat

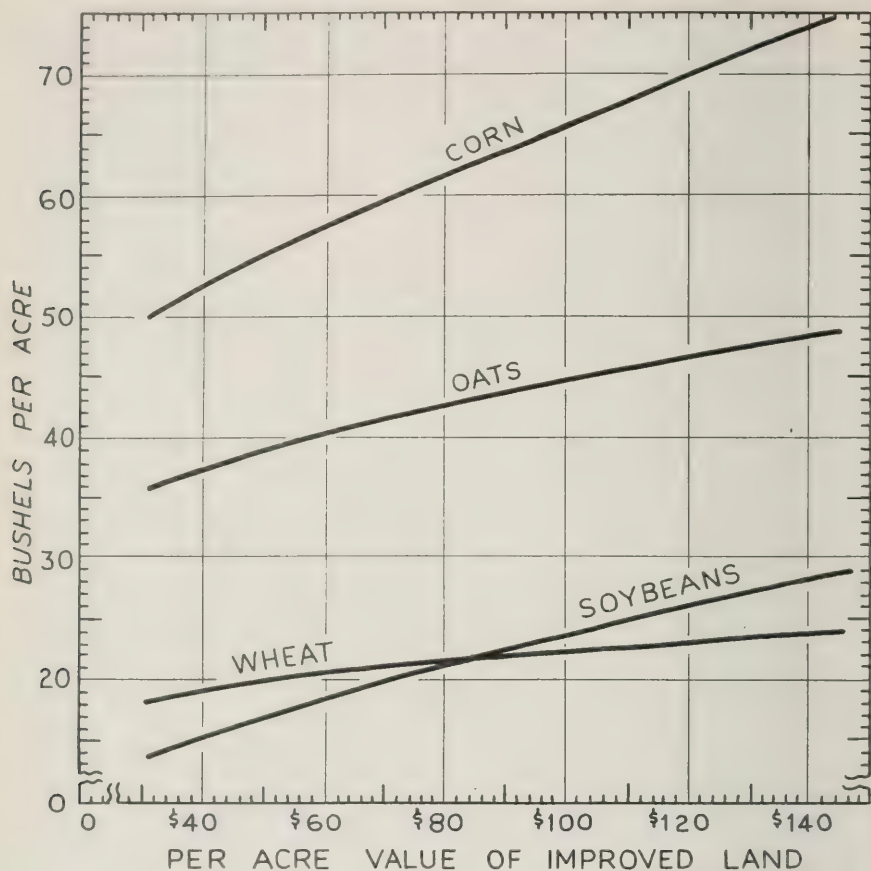


FIG. 4.—AVERAGE YIELDS OF CORN, OATS, WHEAT, AND SOYBEANS WITH VARYING VALUES OF IMPROVED LAND, FARMING-TYPE AREAS, 3, 4, AND 5, 1941

yields may be higher or lower in relation to corn yields in years with growing conditions different than those in 1941. Data of this type are valuable because they enable farmers to compare the yields on their own farms with those on farms having a similar quality of land.

Source of income. The grouping of accounting farms according to source of income for 1941 gives each farmer an opportunity to compare his farm with the average of other farms having similar sources of income. It also gives him an opportunity to study investments, land use, crop yields, labor requirements, horse and machinery requirements, and other factors that are associated with various types of farming.

TABLE 9.—SOURCE OF INCOME RELATED TO FARM EARNINGS AND OTHER FACTORS FOR 2,175 ACCOUNTING FARMS IN FARMING-TYPE AREAS 2, 3, 4, AND 5, 1941

Item	Source of income					
	Grain 40% +	Dairy sales 40% +	Hogs 40% +	Cattle 40% +	General farm	
					L.S. 60% +	L.S. 60% -
Number of farms.....	659	78	692	154	406	186
Percent of income from prod. l.s..	33.6	82.4	85.7	92.6	72.4	54.3
Percent of income from crops....	57.6	9.2	5.5	1.4	18.1	34.1
Investments						
Total per farm.....	\$40 393	\$24 776	\$32 744	\$57 308	\$34 485	\$31 816
Total per acre.....	150	134	148	163	146	144
Land per acre.....	104	73	90	93	88	94
Improvements per acre.....	16	25	21	21	21	18
Machinery per acre ^a	9	10	10	9	10	10
Earnings						
Per farm						
Gross earnings.....	\$ 9 029	\$ 6 197	\$ 8 216	\$13 873	\$ 8 343	\$ 7 328
Gross expenses ^b	3 083	2 969	2 923	5 372	3 112	2 725
Net earnings.....	\$ 5 946	\$ 3 228	\$ 5 293	\$ 8 501	\$ 5 231	\$ 4 603
Per acre						
Gross earnings.....	\$ 33.54	\$ 33.11	\$ 37.21	\$ 39.11	\$ 35.43	\$ 33.25
Gross expenses ^b	11.46	15.84	13.24	15.21	13.20	12.39
Net earnings.....	\$ 22.08	\$ 17.27	\$ 23.97	\$ 23.90	\$ 22.23	\$ 20.86
Rate earned on investment (percent).....	14.8	13.1	16.3	14.8	15.3	14.5
Labor and management earnings.....	\$ 4 527	\$ 2 610	\$ 4 261	\$ 6 203	\$ 4 113	\$ 3 606
Size and Intensity						
Acres per farm.....	269	188	222	362	237	220
Percent of land area tillable....	88.9	78.8	81.5	81.7	82.8	86.8
Percent of tillable land in grain	71.4	53.8	63.1	61.4	61.8	64.5
Percent in hay and pasture.....	23.7	42.6	34.0	33.9	34.5	31.0
Feed fed per acre to prod. l.s. ^a	\$ 6.42	\$ 13.53	\$ 18.11	\$ 24.64	\$ 14.34	\$ 10.13
Months of labor per 100 crop A.	10.4	22.7	15.5	13.3	15.6	13.5
Total months of labor.....	20.8	24.5	21.4	30.0	23.6	20.3
Crop Yields per Acre						
Corn, bushels.....	67.0	61.1	66.6	72.0	65.8	64.4
Livestock Returns						
Per \$100 feed fed.....	\$188	\$210	\$182	\$150	\$186	\$189
Hog returns per litter.....	138	148	152	157	143	145
Dairy returns per cow.....	98	169	97	104	125	109
Expense Factors						
Labor cost per crop acre ^b	\$ 5.73	\$ 12.12	\$ 8.60	\$ 7.71	\$ 8.63	\$ 7.30
Horse and machinery cost per crop acre.....	5.10	8.70	6.54	6.66	6.27	5.79
Improvement cost per acre.....	1.14	1.70	1.48	1.52	1.44	1.28
Land tax per acre.....	1.30	1.06	1.20	1.23	1.17	1.24

^aMachinery includes farm share of automobile.^bExpenses include operator's and family's labor.

Each farmer, however, should use caution in interpreting the data in Table 9. For example, the fact that hog farms showed the largest rate earned on the investment for 1941 and that dairy farms showed the smallest does not mean such a relationship will prevail over a long period of years. The relative profitableness of these enterprises in 1941 was influenced by conditions affecting price and production.

In 1940, the rate earned on investment was largest for cattle farms and smallest for hog farms, as indicated by the following: grain farms, 7.6 percent; dairy farms, 6.8 percent; hog farms, 6.4 percent; cattle farms, 8.2 percent; general farms with more than 60 percent of the income from livestock, 7.1 percent; general farms with less than 60 percent of the income from livestock, 7.0 percent. The change in the relative earnings of hog farms from 1940 to 1941 clearly reflects the increase in the average price of hogs from \$5.54 to \$9.37.

The following data indicate the average rate earned on investment for the 10-year period, 1926-1935, for farms from the same area grouped according to source of income: farms with over 60 percent of their incomes from grain, 4.0 percent; farms with 40-59 percent of their incomes from grain, 3.6 percent; hog farms, 2.8 percent; cattle farms, 3.5 percent; dairy farms, 2.8 percent; and mixed-income farms, 3.1 percent. On the basis of earnings on accounting farms for the past 15 years, the grain farms in Areas 2, 3, 4, and 5 have shown higher current returns than have livestock farms. In these records, no charge was made for fertility losses, and no inference is intended concerning the results if these systems are followed for another 15-year period. The mechanization of farms in this area in recent years has reduced the cost of producing grains more than the cost of producing livestock and livestock products.

When comparing the returns on the various groups of farms per \$100 worth of feed fed, one should consider the fact that the necessary returns per \$100 worth of feed fed to pay for feed (including pasture), labor, equipment, buildings, and other costs vary widely. According to 5-year averages of complete cost studies (1933-1937), the necessary returns were: poultry, \$195; dairy cattle, \$157; hogs, \$127; and feeder cattle, \$117.

Furthermore, when comparing crop yields for the various types of farming, one should note the following items which indicate that the grain farms were located on the better land: (1) high value of land per acre; (2) larger percent of land area tillable; (3) large percent of land in grain; and (4) high land tax per acre.

Differences in expenses are highly significant for the 6 groups of farms. Labor input per 100 crop acres was highest on the dairy farms, where 22.7 months of labor were used, and lowest on the grain farms, where 10.4 months of labor were used. The dairy farmers evidently utilized a large amount of labor to increase the size of their businesses without increasing the size of their farms.

The labor cost per crop acre ranged from \$12.12 on the dairy farms to \$5.73 on the grain farms; the horse and machinery cost per crop acre

TABLE 10.—SIZE OF FARM RELATED TO FARM EARNINGS AND OTHER FACTORS FOR 2,175 ACCOUNTING FARMS IN FARMING-TYPE AREAS 2, 3, 4, AND 5, 1941

Item	Total acres in farm					
	Less than 121	121 to 200	201 to 280	281 to 360	361 to 440	441 or more
Number of farms.....	247	785	541	316	139	147
Acres per farm.....	102	166	241	321	399	571
Investments						
Total per farm.....	\$16 099	\$26 257	\$36 197	\$47 923	\$55 917	\$76 663
Total per acre.....	158	158	150	150	140	135
Land per acre.....	93	98	97	98	92	87
Improvements per acre.....	25	21	19	18	16	16
Machinery per acre ^a	12	11	10	9	8	8
Earnings						
Per farm						
Gross earnings.....	\$ 4 117	\$ 6 333	\$ 8 536	\$11 050	\$13 064	\$17 183
Gross expenses ^b	1 759	2 382	3 064	3 804	4 350	5 857
Net earnings.....	\$ 2 358	\$ 3 951	\$ 5 472	\$ 7 246	\$ 8 714	\$11 326
Per acre						
Gross earnings.....	\$ 40.32	\$ 38.09	\$ 35.36	\$ 34.43	\$ 32.74	\$ 30.14
Gross expenses ^b	17.21	14.33	12.69	11.86	10.90	10.28
Net earnings.....	\$ 23.11	\$ 23.76	\$ 22.67	\$ 22.57	\$ 21.84	\$ 19.86
Rate earned on investment (percent).....	14.8	15.1	15.2	15.2	15.7	14.8
Labor and management earnings.....	\$ 2 143	\$ 3 240	\$ 4 268	\$ 5 452	\$ 6 511	\$ 8 075
Size and Intensity						
Percent of land area tillable....	87.8	87.6	85.6	84.1	81.9	80.4
Percent of tillable land in grain	62.6	65.5	66.6	67.0	64.9	64.6
Percent in hay and pasture....	34.3	31.3	29.6	28.7	30.9	29.2
Feed fed per acre to prod. l.s....	\$ 15.42	\$ 13.86	\$ 12.13	\$ 12.22	\$ 11.46	\$ 11.88
Percent of income from prod. l.s.	71.1	65.7	60.4	60.5	60.9	63.2
Percent of income from grain....	17.9	24.3	30.3	30.8	30.5	28.7
Months of labor per 100 crop A.	20.9	15.8	13.5	12.0	11.7	10.1
Total months of labor.....	14.7	18.1	22.1	26.2	29.5	35.9
Number of work horses.....	2.2	2.5	2.9	3.2	3.7	4.3
Crop Yields per Acre						
Corn (bushels).....	66.3	66.7	67.2	67.2	65.4	65.3
Livestock Returns						
Per \$100 feed fed.....	\$198	\$193	\$185	\$179	\$179	\$162
Hog returns per litter.....	146	150	147	147	148	149
Dairy returns per cow.....	108	114	115	112	113	112
Expense Factors						
Labor cost per crop acre ^b	\$ 11.46	\$ 8.64	\$ 7.47	\$ 6.86	\$ 6.41	\$ 5.80
Horse and machinery cost per crop acre ^a	7.38	6.40	5.90	5.66	5.66	5.52
Improvement cost per acre....	1.68	1.51	1.34	1.26	1.20	1.15
Land tax per acre.....	1.31	1.29	1.23	1.21	1.20	1.16

^aMachinery includes farm share of automobile.^bExpenses include operator's and family's labor.

was highest on the dairy farms, where it averaged \$8.70, and lowest on the grain farms, where it averaged \$5.10; the improvement cost per acre averaged \$1.70 on the dairy farms and \$1.14 on the grain farms.

Labor, horse and machinery, and improvement costs were higher for all sources of income groups in 1941 than in 1940; labor cost per crop acre, for example, was 17 percent higher on the grain farms in 1941 than in 1940.

Size of farm. When the farm records in Farming-Type Areas 2, 3, 4, and 5 are sorted according to the total acres in the farm, they indicate that the operators on the largest farms took in more money during the year than did those on the smallest ones; and after deductions were made for farm business expenditures and interest on the investment, the 147 largest farms had labor and management earnings which averaged \$8,075, contrasted with \$2,143 for the 247 smallest farms. The latter had higher investments an acre for improvements, machinery, and total investment, indicating a higher capital input. The rate earned on investment was practically the same for all size groups, but there was a slight increase from the smallest farms up to the size ranging from 361 to 440 acres. The difference was much smaller in 1941 than in 1940 or for a recent 10-year period. The average rates for 1940 were as follows: less than 121 acres, 5.8 percent; 121 to 200 acres, 7.2 percent; 201 to 280 acres, 7.4 percent; 281 to 360 acres, 7.3 percent; 361 to 440 acres, 7.0 percent; 441 or more acres, 7.9 percent.

A part of the difference in the earnings pattern as related to size of farm for 1941 contrasted with that of 1940 may be due to the correlation of enterprises with size of farm. The size of the hog farms averaged much smaller than that of the cattle farms, and hog prices were much higher in relation to cattle prices in 1941 than in 1940. This would cause the earnings on small farms in 1941 to be higher in relation to large farms than in 1940.

For the 10-year period, 1926-1935, the average rate earned on investment (value of farm products used in the household excluded) for accounting farms by size groups in Areas 3, 4, and 5 was as follows: 0-99 acres, .8 percent; 100-139 acres, 2.0 percent; 140-179 acres, 2.6 percent; 180-219 acres, 2.8 percent; 220-259 acres, 3.0 percent; 260-299 acres, 3.5 percent; 300-339 acres, 3.4 percent; and 340 acres and over, 3.3 percent. In recent years, the rate earned on investment increased as the size of farm increased to about 300 acres, declined slightly for farms ranging from 300 to 400 acres, and increased again for farms ranging from 400 to 600 acres. Those farms that are too large for one tractor but not large enough for two seem to be an awkward size.

The smallest farms were operated more intensively than were the largest ones. This variation was indicated by the higher gross earnings an acre, by the larger labor and capital input an acre, and by the larger value of feed fed an acre to productive livestock.

The method used to increase the volume of business depended upon the individual farm. Some farm operators apparently increased the volume of their businesses by improving the quality and increasing the

amount of livestock; others, by growing more intensive crops, by increasing crop yields, or by developing special markets; still others, by increasing the acreage operated or by applying combinations of the above methods.

Labor and horse and machinery expenses. The effect of the amount of feed fed an acre to productive livestock on labor and horse and machinery cost per crop acre is shown graphically in Figures 5 and 6 for the same size groups of farms as were used in Table 10.

Four significant things are apparent in these charts: (1) The costs per crop acre increased as the size of the farms decreased; (2) the costs increased as the amount of feed fed per acre increased; (3) the costs decreased much more rapidly when the size of farms increased from 120 acres or less to 121-200 acres than when they increased from 201-280 to 281-360 acres, or into the larger size groups (this situation is explained in part by the fact that dairy cattle and poultry predominate

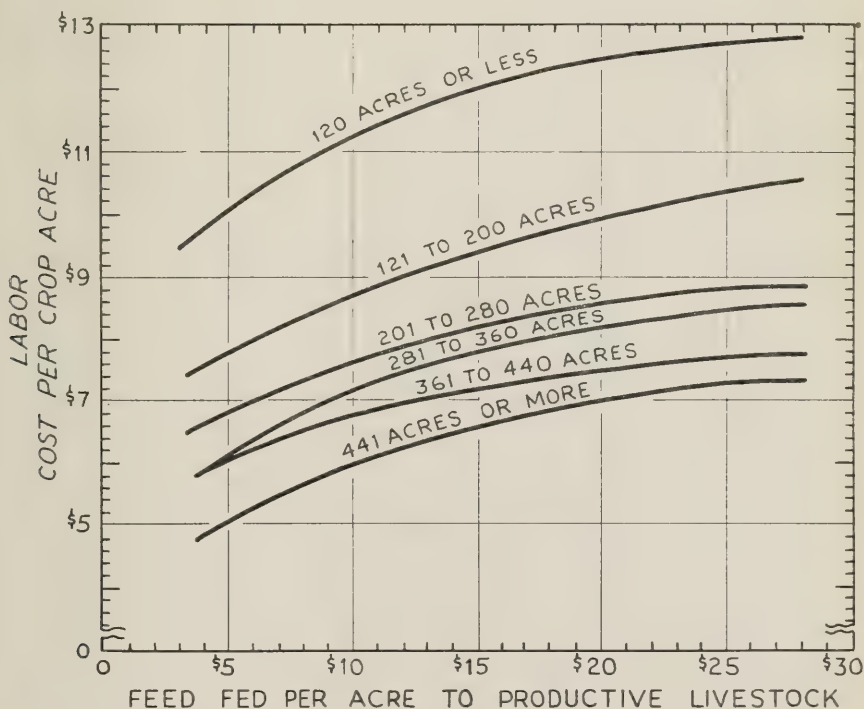


FIG. 5.—LABOR COST PER CROP ACRE FOR FARMS OF VARYING SIZE AND WITH VARYING AMOUNTS OF FEED FED TO PRODUCTIVE LIVESTOCK, FARMING-TYPE AREAS 2, 3, 4, AND 5, 1941

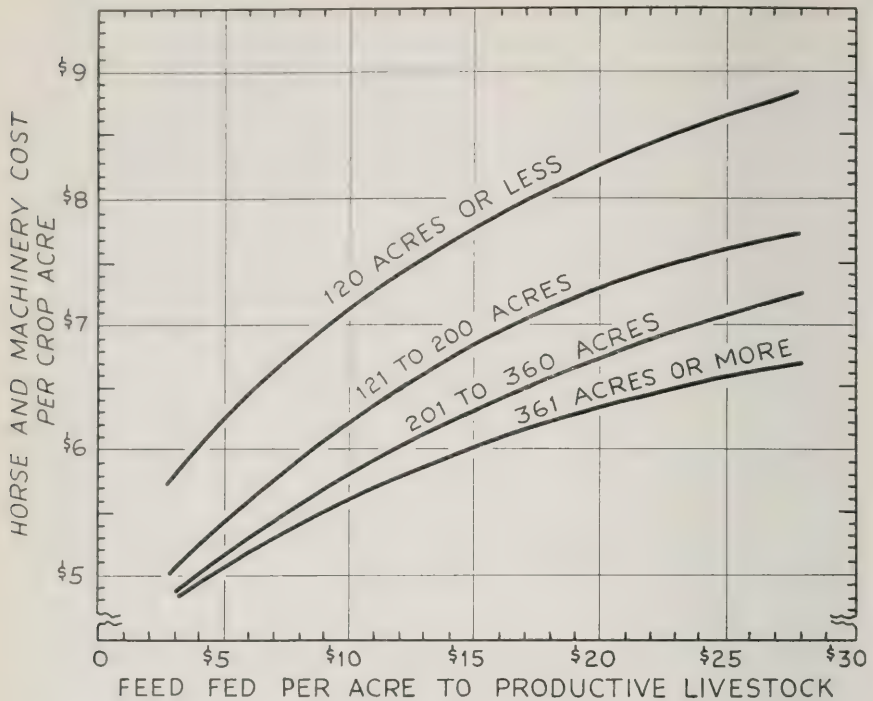


FIG. 6.—HORSE AND MACHINERY COST PER CROP ACRE FOR FARMS OF VARYING SIZE AND WITH VARYING AMOUNTS OF FEED FED TO PRODUCTIVE LIVESTOCK, FARMING-TYPE AREAS 2, 3, 4, AND 5, 1941

on the smaller farms and that beef cattle predominate on the larger farms); and (4) the costs increased rapidly as the feed fed an acre increased from \$3 to about \$10 an acre, especially for farms in the smallest size group, and the costs increased less but more uniformly as larger amounts of feed were fed.

Farmers who know what their cost for labor and for horse and machinery expense per crop acre was in 1941 will find that these data contain a basis for comparing their expenses with averages for other farms of the same size and with the same intensity of livestock.¹

Variations by Farming-Type Areas

The data in Tables 11 and 12 indicate a wide range of farming conditions in Illinois and afford ample evidence of the need for grouping counties by farming-type areas. They show a range in size from 181 acres

¹Data for other areas of Illinois are available in the area reports for 1941.

in Area 1 to 265 acres in Area 4 and an average investment per farm varying from \$12,384 in Area 9 to \$44,867 in Area 4.

Crop yields varied from area to area with the productivity of the soil and with the weather conditions. The relative proportion of income from grain, hogs, cattle, dairy, and poultry varied according to feeds available, markets, labor, and other factors. Expenses per crop acre for labor and for horses and machinery varied with the size of farm, the amount and kind of livestock, the wages for labor, and the type of equipment.

Data for Counties and Groups of Counties

Averages were calculated for each county with 30 or more records and for groups of counties with less than 30 records. These averages are arranged in Table 13 according to farming-type areas. The averages for Area 1 are given at the front of the list, and those for Area 9 at the end of it.

TABLE 11. INVESTMENTS, CASH RECEIPTS, CASH EXPENSES, AND INVENTORY CHANGES BY FARMING-TYPE AREAS, 1941

Item	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9
Capital Investment, Total									
Land	\$30 621	\$33 724	\$37 630	\$44 867	\$28 037	\$18 363	\$14 129	\$15 325	\$12 384
Farm improvements	14 871	18 461	23 338	30 806	13 688	2 830	7 433	8 051	9 449
Machinery and equipment	9 847	15 959	3 903	4 950	3 688	2 840	2 251	3 030	9 290
Feed and grain	2 341	2 312	3 374	2 583	2 010	2 861	4 470	1 372	1 358
Livestock, total	2 454	2 583	3 108	3 720	2 340	1 124	1 124	1 333	1 068
	4 856	4 429	3 907	3 009	3 040	2 119	1 851	1 630	1 610
Cash Receipts, Total									
Feed and grain	\$ 9 135	\$ 9 310	\$10 151	\$ 9 993	\$ 8 376	\$ 4 847	\$ 3 952	\$ 4 336	\$ 3 453
AAA payments	666	901	1 853	3 633	1 766	987	763	1 195	734
Labor and miscellaneous	275	301	518	576	333	131	168	184	137
Livestock, total	318	326	422	443	397	292	263	278	272
	7 876	7 692	7 358	5 341	5 880	3 437	2 758	2 679	2 310
Horses	41	25	32	41	40	48	64	33	75
Cattle	2 969	3 493	2 806	2 164	2 225	773	729	776	623
Hogs	1 120	2 377	3 485	1 000	2 448	886	1 095	1 164	747
Sheep	99	216	266	226	190	68	124	87	44
Poultry and eggs	362	379	294	394	288	429	376	374	262
Dairy sales	3 285	1 202	475	616	689	1 233	370	245	559
Cash Expenses, Total									
Farm improvements	\$ 6 707	\$ 5 980	\$ 6 379	\$ 5 710	\$ 5 448	\$ 3 017	\$ 2 536	\$ 2 844	\$ 2 463
Livestock purchases	626	476	431	431	367	273	273	272	258
Feed and grain	2 274	2 128	1 822	1 437	1 577	437	350	521	352
Machinery and equipment	935	1 117	1 495	951	1 174	616	487	489	417
Hired labor	1 556	1 281	1 502	1 646	1 367	1 046	846	941	754
Crop expense	706	515	515	535	421	275	239	237	313
Taxes	203	163	159	184	142	118	143	139	156
Livestock and miscellaneous	270	281	343	408	296	181	164	205	159
	137	117	126	118	104	71	49	40	54
Cash Balance									
Increase in inventory	\$ 2 428	\$ 3 330	\$ 3 772	\$ 4 283	\$ 2 928	\$ 1 830	\$ 1 416	\$ 1 492	\$ 990
Total unpaid labor	2 413	2 274	2 098	2 801	2 241	879	865	1 241	583
	787	810	764	768	850	804	678	646	663
Net Farm Income									
	\$ 4 054	\$ 4 794	\$ 5 706	\$ 6 316	\$ 4 319	\$ 1 905	\$ 1 603	\$ 2 087	\$ 910

TABLE 12.—FACTORS HELPING TO ANALYZE THE FARM BUSINESS AVERAGES FOR FARMING-TYPE AREAS, 1941

Item	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9
Size of farm, acres	181	208	241	265	250	213	247	221	232
Tillable land (percent)	82	82	81	90	80	80	82	84	76
Inventory Basis									
Gross receipts per acre	\$41.25	\$37.11	\$36.79	\$36.55	\$28.65	\$19.65	\$14.56	\$18.44	\$13.11
Total expense per acre	18.90	14.09	13.09	12.70	11.39	10.70	8.07	9.00	9.18
Net receipts per acre	\$22.35	\$23.02	\$23.70	\$23.85	\$17.26	\$8.95	\$6.49	\$9.44	\$3.93
Cash Basis									
Gross receipts per acre	\$50.36	\$44.71	\$42.15	\$37.74	\$33.46	\$22.76	\$16.01	\$19.61	\$14.91
Total cash expense per acre	41.31	32.61	29.66	24.46	25.16	17.94	13.02	13.79	13.50
Net cash income per acre	\$ 9.05	\$12.10	\$12.49	\$13.28	\$ 8.30	\$ 4.82	\$ 2.99	\$ 5.82	\$ 1.41
Acres in:									
Corn	49	54	67	77	51	29	39	42	27
Oats	28	36	35	40	21	16	12	13	8
Wheat	2	2	6	15	25	38	20	29	21
Soybeans	5	6	16	35	23	6	8	9	5
Bushels per acre:									
Corn	71	71	68	68	64	43	39	48	34
Oats	57	50	50	50	43	36	32	41	30
Wheat	26	20	20	23	22	21	20	22	24
Soybeans	18	23	25	26	22	10	11	17	14
Value of feed fed to livestock	\$3 728	\$3 893	\$3 884	\$2 781	\$2 911	\$1 828	\$1 547	\$1 486	\$1 209
Returns per \$100 feed fed	179	175	183	181	188	196	192	192	204
Feed fed per acre to livestock	\$20.55	\$18.70	\$16.13	\$10.50	\$11.63	\$ 8.58	\$ 6.27	\$ 6.72	\$ 5.22
Returns per acre from livestock	36.78	32.80	29.60	19.05	21.85	16.78	12.00	12.94	10.65
Horse and machinery cost per crop acre	\$ 8.46	\$ 6.58	\$ 6.39	\$ 5.67	\$ 5.96	\$ 6.07	\$ 4.69	\$ 5.02	\$ 6.47
Labor cost per crop acre	11.59	8.83	7.98	6.50	8.35	8.24	6.60	6.72	9.03
Value of land per acre	\$ 78	\$ 89	\$ 97	\$ 115	\$ 68	\$ 46	\$ 30	\$ 40	\$ 26
Value of improvements per acre	38	29	20	19	15	13	9	10	15
Total investment per acre	169	162	156	169	112	86	57	69	53
Number of farms included	85	516	594	991	362	307	121	80	34

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941

Accounting items	McHenry	Boone, Cook, DuPage, Kane, Lake	DeKalb	Stephenson	Lee
Capital investment, total.....	1 \$26 910	\$32 752	\$44 004	\$23 423	\$47 849
Land.....	2 11 017	15 828	25 431	11 058	29 968
Farm improvements.....	3 7 060	6 804	7 081	5 140	6 433
Horses.....	4 327	342	301	248	243
Cattle.....	5 3 691	4 008	4 080	2 352	3 348
Hogs.....	6 216	556	877	628	792
Sheep.....	7 10	109	306	25	290
Poultry.....	8 115	125	109	121	101
Feed and grain.....	9 2 245	2 575	3 196	1 876	3 822
Machinery and equipment.....	10 2 229	2 405	2 623	1 975	2 852
Receipts, net increases, total.....	11 \$ 7 462	\$ 7 934	\$ 9 791	\$ 6 378	\$10 168
Cattle.....	12 890	1 849	3 095	1 244	2 637
Dairy sales.....	13 4 699	2 472	947	1 874	857
Hogs.....	14 618	1 656	3 057	2 418	3 037
Sheep.....	15 11	85	142	32	214
Poultry and eggs.....	16 320	356	398	354	338
Farm products used in household.....	17 293	271	259	283	284
Feed and grain.....	18 298	920	1 338	13	2 111
AAA payment.....	19 287	267	509	124	623
Labor and miscellaneous.....	20 46	58	46	36	67
Expenses, net decreases, total.....	21 \$ 2 659	\$ 2 633	\$ 2 519	\$ 1 645	\$ 2 719
Farm improvements.....	22 397	427	415	287	442
Feed and grain.....	23 824	937	883	501	940
Machinery and equipment.....	24 827	636	518	329	587
Hired labor.....	25 197	207	226	119	219
Crop expenses.....	26 239	288	325	199	366
Taxes.....	27 175	138	152	120	165
Livestock and miscellaneous.....	28 803	792	784	850	742
Receipts less expenses.....	29 \$ 4 803	\$ 5 301	\$ 7 272	\$ 4 733	\$ 7 449
Unpaid labor.....	30 778	792	784	850	742
Net farm earnings.....	31 \$ 4 025	\$ 4 509	\$ 6 488	\$ 3 883	\$ 6 707
Rate earned on investment, percent.....	32 15.0	13.8	14.7	16.6	14.0
Labor and management earnings.....	33 \$ 3 269	\$ 3 474	\$ 4 917	\$ 3 346	\$ 4 924
Excess of sales over expenses.....	34 2 461	2 409	3 865	2 758	4 374
Increase in inventory.....	35 2 049	2 621	3 148	1 692	2 791
Number of farms included.....	36 31	54	142	86	53
Size of farm, acres.....	37 172	187	213	160	270
Gross earnings per acre.....	38 \$ 43.31	\$ 42.52	\$ 45.95	\$ 39.79	\$ 37.60
Total expenses per acre.....	39 19.95	18.36	15.50	15.57	12.80
Net earnings per acre.....	40 \$ 23.36	\$ 24.16	\$ 30.45	\$ 24.22	\$ 24.80
Value of land per acre.....	41 \$ 64	\$ 85	\$119	\$ 69	\$111
Value of improved land per acre.....	42 68	88	122	70	114
Value of improvements per acre.....	43 41	36	33	32	24
Total investment per acre.....	44 156	176	206	146	177
Percent of land area tillable.....	45 79.1	84.2	91.1	83.5	86.9
Percent of tillable land in.....					
Corn.....	46 30.4	34.2	35.2	26.4	34.2
Oats.....	47 14.8	20.8	22.3	21.2	22.0
Wheat.....	48 .9	1.2	1.1	.4	1.4
Soybeans for grain.....	49 1.0	4.8	5.0	1.3	6.4
Other cultivated crops.....	50 8.1	8.1	7.0	5.0	6.6
Legume hay and pasture.....	51 25.9	19.1	18.7	31.1	20.5
Nonlegume hay and pasture.....	52 18.9	11.8	10.7	14.6	8.9
Bushels per acre: Corn.....	53 67.4	72.0	75.8	72.4	66.4
Oats.....	54 51.6	58.5	59.8	43.0	52.4
Wheat.....	55 20.0	27.2	25.2	14.0	19.4
Barley.....	56 39.8	41.5	43.2	37.2	29.2
Soybeans.....	57 19.3	18.3	23.0	18.8	23.5
Feed fed per acre to livestock.....	58 \$ 18.53	\$ 21.63	\$ 22.61	\$ 19.79	\$ 16.15
Returns for \$100 feed fed.....	59 212	164	163	193	167
Poultry returns per hen.....	60 3.20	3.60	3.87	3.21	3.54
Number of litters farrowed.....	61 6.8	11.0	21.7	17.6	19.4
Returns per litter.....	62 \$150	\$170	\$165	\$151	\$165
Dairy returns per cow.....	63 177	169	137	129	125
Horse and machinery cost per crop acre.....	64 \$ 9.39	\$ 8.04	\$ 6.32	\$ 7.08	\$ 5.55
Labor cost per crop acre.....	65 14.51	10.26	7.80	11.57	6.64
Improvement cost per acre.....	66 2.30	2.29	1.95	1.79	1.63
Taxes per acre.....	67 1.39	1.54	1.53	1.24	1.35

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—Continued

	Ogle	Rock Island	Winne- bago	White- side	Jo Davies	Carroll	Henry	McDon- ough	Knox
1	\$30 648	\$25 159	\$31 968	\$29 293	\$25 788	\$26 372	\$38 311	\$35 375	\$40 145
2	16 289	13 820	14 617	14 675	12 826	13 768	22 271	22 585	24 629
3	5 696	4 189	7 722	5 626	4 931	4 888	5 796	4 292	5 436
4	289	256	344	267	371	320	249	246	255
5	2 929	1 740	3 044	3 312	2 756	2 758	3 180	1 669	2 328
6	785	677	844	911	760	708	1 095	1 009	1 063
7	53	80	163	68	99	132	70	67	126
8	83	115	101	98	91	132	99	82	69
9	2 336	2 190	2 550	2 233	1 956	1 869	2 957	3 044	3 758
10	2 188	2 092	2 583	2 103	1 998	1 797	2 594	2 381	2 481
11	\$ 7 103	\$ 6 398	\$ 8 416	\$ 7 631	\$ 6 826	\$ 6 731	\$ 8 987	\$ 8 977	\$ 9 709
12	1 962	1 117	1 876	2 223	1 440	2 366	2 647	1 680	1 612
13	1 080	693	1 972	1 264	1 660	623	473	347	657
14	2 632	2 874	2 554	3 071	2 719	2 501	4 376	4 555	3 866
15	67	76	156	50	82	146	123	69	94
16	375	405	356	338	323	413	382	303	223
17	258	310	277	249	299	289	289	310	312
18	291	529	765	.....	.....	.....	160	1 242	2 342
19	400	350	391	400	266	381	485	429	531
20	38	44	69	36	37	12	52	42	72
21	\$ 2 139	\$ 1 637	\$ 2 458	\$ 2 117	\$ 2 191	\$ 1 718	\$ 2 480	\$ 2 248	\$ 2 566
22	411	260	541	346	369	260	364	342	398
23	.....	.....	.....	159	308	207	.....	.....	.....
24	714	640	861	735	661	536	876	828	880
25	452	216	470	359	365	262	574	467	552
26	127	105	191	133	117	109	162	140	196
27	304	301	271	246	234	216	351	310	378
28	131	115	124	139	137	128	153	161	162
29	\$ 4 964	\$ 4 761	\$ 5 958	\$ 5 514	\$ 4 635	\$ 5 013	\$ 6 507	\$ 6 729	\$ 7 143
30	845	793	855	827	832	819	793	778	777
31	\$ 4 119	\$ 3 968	\$ 5 103	\$ 4 687	\$ 3 803	\$ 4 194	\$ 5 714	\$ 5 951	\$ 6 366
32	13.4	15.8	16.0	16.0	14.7	15.9	14.9	16.8	15.9
33	\$ 3 199	\$ 3 317	\$ 4 123	\$ 3 821	\$ 3 097	\$ 3 451	\$ 4 400	\$ 4 779	\$ 4 975
34	2 848	3 166	3 062	2 971	3 327	2 410	3 557	4 223	4 103
35	1 858	1 285	2 619	2 294	1 009	2 314	2 661	2 196	2 728
36	44	49	34	37	38	33	81	74	62
37	211	184	248	198	234	185	227	225	268
38	\$ 33.73	\$ 34.83	\$ 33.91	\$ 38.62	\$ 29.12	\$ 36.34	\$ 39.66	\$ 39.97	\$ 36.17
39	14.17	13.23	13.35	14.90	12.90	13.69	14.44	13.47	12.45
40	\$ 19.56	\$ 21.60	\$ 20.56	\$ 23.72	\$ 16.22	\$ 22.65	\$ 25.22	\$ 26.50	\$ 23.72
41	\$ 77	\$ 75	\$ 59	\$ 74	\$ 55	\$ 74	\$ 98	\$101	\$ 92
42	86	84	64	77	65	83	106	110	106
43	27	23	31	28	21	26	26	19	20
44	146	137	129	148	110	142	169	158	150
45	77.6	76.6	75.3	83.1	62.6	77.9	81.6	83.9	76.8
46	29.9	34.3	29.4	31.9	24.7	28.4	35.1	33.2	34.9
47	23.7	16.2	18.0	18.8	18.5	21.6	19.9	15.3	16.9
48	7	1.1	1.9	5.1	5	6	1.4	7.6	1.9
49	2.3	2.5	3.2	1.9	3	6	3.4	13.2	11.8
50	6.2	4.2	8.2	3.2	6.3	4.2	2.6	3.7	4.0
51	25.2	29.7	27.2	22.9	26.9	30.1	24.2	17.2	18.8
52	12.0	12.0	12.1	16.2	22.8	14.5	13.4	9.8	11.7
53	68.9	63.4	70.0	73.5	65.0	74.2	68.1	64.4	67.7
54	47.1	32.1	44.0	40.7	41.1	42.6	36.8	44.0	34.1
55	20.0	16.3	23.3	19.5	20.0	16.7	15.8	22.6	14.6
56	31.7	28.0	35.6	34.0	21.9	24.4	26.3	.....	.....
57	21.6	22.9	24.4	19.1	18.0	23.8	24.0	24.5	27.0
58	\$ 17.90	\$ 14.75	\$ 15.45	\$ 21.31	\$ 13.80	\$ 18.44	\$ 20.34	\$ 17.40	\$ 12.55
59	167	199	186	170	199	183	179	184	199
60	4.22	3.72	4.14	3.39	3.22	3.04	3.88	4.22	3.45
61	17.0	19.8	16.9	24.6	18.1	18.5	29.2	31.7	26.6
62	\$165	\$147	\$161	\$146	\$146	\$154	\$151	\$147	\$149
63	127	99	135	136	114	111	96	100	110
64	\$ 6.46	\$ 7.57	\$ 6.74	\$ 7.05	\$ 7.94	\$ 6.41	\$ 7.17	\$ 6.17	\$ 5.96
65	9.61	9.55	8.50	9.41	11.17	10.11	9.44	7.82	7.48
66	1.95	1.42	2.18	1.75	1.57	1.40	1.61	1.52	1.48
67	1.44	1.64	1.09	1.24	1.00	1.17	1.55	1.38	1.41

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—*Continued*

Accounting items	Bureau	Marshall- Putnam	Peoria	Fulton	Hancock
Capital investment, total	1 \$40 593	\$49 823	\$35 323	\$30 055	\$29 561
Land	2 24 394	31 906	22 868	19 077	19 008
Farm improvements	3 6 024	6 113	4 505	3 746	3 300
Horses	4 235	211	262	223	309
Cattle	5 2 686	3 413	1 630	1 760	2 129
Hogs	6 1 042	1 104	763	840	742
Sheep	7 190	514	131	83	73
Poultry	8 127	89	106	63	55
Feed and grain	9 3 313	3 972	2 785	2 232	2 251
Machinery and equipment	10 2 582	2 501	2 273	2 031	1 694
Receipts, net increases, total	11 \$ 9 774	\$11 571	\$ 8 498	\$ 8 023	\$ 7 229
Cattle	12 2 275	2 840	1 168	1 323	1 476
Dairy sales	13 621	557	467	474	522
Hogs	14 4 051	4 943	3 347	3 706	2 994
Sheep	15 123	379	56	86	90
Poultry and eggs	16 477	229	359	251	177
Farm products used in household	17 326	284	281	277	277
Feed and grain	18 1 392	1 557	2 145	1 255	1 253
AAA payment	19 452	724	572	583	372
Labor and miscellaneous	20 57	58	103	68	68
Expenses, net decreases, total	21 \$ 2 334	\$ 2 907	\$ 2 111	\$ 2 250	\$ 1 936
Farm improvements	22 399	460	306	355	292
Feed and grain	23 819	1 072	723	813	668
Machinery and equipment	24 526	594	463	432	424
Hired labor	25 159	195	139	136	150
Crop expenses	26 278	417	325	391	297
Taxes	27 153	169	155	123	105
Livestock and miscellaneous	28 740	866	637	773	523
Receipts less expenses	29 782	730	724	763	785
Unpaid labor	30 6 658	\$ 7 934	\$ 5 663	\$ 5 010	\$ 4 508
Net farm earnings	31 16.4	15.9	16.0	16.7	15.2
Rate earned on investment, percent	32 \$ 5 210	\$ 6 025	\$ 4 470	\$ 4 128	\$ 3 594
Labor and management earnings	33 3 736	4 245	3 581	3 136	2 800
Excess of sales over expenses	34 3 378	4 135	2 525	2 360	2 207
Increase in inventory	35 62	47	44	53	35
Number of farms included	36 218	276	220	250	228
Size of farm, acres	37 \$ 44.73	\$ 41.97	\$ 38.68	\$ 32.13	\$ 31.65
Gross earnings per acre	38 14.26	13.19	12.90	12.07	11.91
Total expenses per acre	39 \$ 30.47	\$ 28.78	\$ 25.78	\$ 20.06	\$ 19.74
Net earnings per acre	40 \$112	\$116	\$104	\$ 76	\$ 83
Value of land per acre	41 118	128	113	90	91
Value of improved land per acre	42 28	22	21	15	14
Value of improvements per acre	43 186	181	161	120	129
Total investment per acre	44 86.2	82.4	84.0	74.0	80.7
Percent of land area tillable	45 37.4	34.8	32.2	30.1	26.3
Percent of tillable land in—	46 20.7	20.7	19.9	15.3	15.9
Corn	47 5	3.1	2.4	11.3	5.5
Oats	48 3.0	7.0	8.1	9.8	13.6
Wheat	49 4.0	4.5	5.0	2.1	4.6
Soybeans for grain	50 22.2	22.4	21.9	20.4	20.1
Other cultivated crops	51 12.2	7.5	10.5	11.0	14.0
Legume hay and pasture	52 77.2	72.2	70.4	60.6	62.6
Nonlegume hay and pasture	53 45.4	47.7	40.1	40.4	47.6
Bushels per acre: Corn	54 22.2	22.4	23.5	20.7	17.6
Oats	55 26.2	15.7	...	...	...
Wheat	56 26.5	27.6	29.3	21.0	20.7
Barley	57 19.80	\$ 18.70	\$ 13.86	\$ 12.51	\$ 12.99
Soybeans	58 180	178	184	194	184
Feed fed per acre to livestock	59 4.50	3.27	3.94	4.46	3.17
Returns for \$100 feed fed	60 26.7	34.4	23.8	26.6	21.5
Poultry returns per hen	61 \$164	\$156	\$151	\$150	\$138
Number of litters farrowed	62 109	108	108	98	94
Returns per litter	63 \$ 6.34	\$ 6.41	\$ 6.01	\$ 6.18	\$ 5.63
Dairy returns per cow	64 8.65	6.96	7.63	7.70	8.26
Home and machinery cost per crop acre	65 1.83	1.67	1.39	1.42	1.28
Labor cost per crop acre	66 1.27	1.51	1.48	1.57	1.30
Improvement cost per acre	67				
Taxes per acre					

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—*Continued*

	Mercer	Warren	Stark	Hender- son	McLean	Tazewell	Ford	Living- ston	Wood- ford
1	\$37 026	\$39 814	\$39 075	\$33 772	\$62 641	\$45 165	\$44 017	\$47 218	\$51 951
2	21 059	25 081	25 200	21 187	41 585	29 333	30 593	31 647	34 307
3	4 564	5 013	5 009	3 441	7 205	5 656	4 179	5 855	6 298
4	392	312	212	335	254	271	295	291	280
5	3 793	2 493	1 384	2 227	3 735	2 212	1 848	1 744	2 581
6	1 171	1 123	1 070	1 102	924	590	404	350	789
7	112	152	459	57	147	72	182	225	197
8	69	77	68	78	100	99	95	149	110
9	3 665	3 158	3 091	3 012	5 366	4 125	3 935	4 103	4 564
10	2 201	2 405	2 582	2 333	3 325	2 807	2 486	2 854	2 825
11	\$ 9 415	\$ 9 229	\$ 9 833	\$ 8 266	\$14 263	\$10 758	\$ 9 056	\$10 058	\$10 907
12	3 078	2 034	989	1 167	2 888	1 501	1 349	1 198	2 068
13	488	328	460	170	709	917	376	582	537
14	4 675	4 074	3 964	4 075	3 852	2 703	1 557	1 655	3 078
15	105	134	465	77	320	290	127	83	362
16	218	229	296	185	312	427	345	749	404
17	299	274	283	269	288	319	252	326	299
18	...	1 558	2 797	1 690	5 035	3 849	4 389	4 773	3 401
19	484	543	510	594	793	681	606	638	723
20	68	55	69	39	66	71	55	54	35
21	\$ 2 947	\$ 2 451	\$ 2 276	\$ 2 439	\$ 3 683	\$ 2 780	\$2 122	\$ 2 370	\$ 2 788
22	386	385	303	290	432	394	258	337	370
23	324	...	...	...	...	...	...	...	...
24	905	931	871	980	1 371	969	852	900	949
25	660	519	476	488	883	592	404	450	638
26	123	179	140	170	269	199	147	160	166
27	376	281	360	362	525	397	362	362	518
28	173	156	126	149	203	229	99	161	147
29	\$ 6 468	\$ 6 778	\$ 7 557	\$ 5 827	\$10 580	\$ 7 978	\$ 6 934	\$ 7 688	\$ 8 119
30	735	714	757	766	664	706	754	740	730
31	\$ 5 733	\$ 6 064	\$ 6 800	\$ 5 061	\$ 9 916	\$ 7 272	\$ 6 180	\$ 6 948	\$ 7 389
32	15.5	15.2	17.4	15.0	15.8	16.1	14.0	14.7	14.2
33	\$ 4 461	\$ 4 668	\$ 5 461	\$ 3 983	\$ 7 347	\$ 5 588	\$ 4 587	\$ 5 171	\$ 5 357
34	4 170	4 124	3 576	3 817	6 344	4 723	3 728	4 182	4 688
35	1 999	2 380	3 698	1 741	3 948	2 926	2 954	3 180	3 132
36	29	37	36	34	55	60	60	53	51
37	250	238	243	272	306	243	253	238	256
38	\$ 37.66	\$ 38.83	\$ 40.53	\$ 30.35	\$ 46.69	\$ 44.31	\$ 35.84	\$ 42.35	\$ 42.64
39	14.73	13.32	12.50	11.77	14.23	14.36	11.38	13.09	13.75
40	\$ 22.93	\$ 25.51	\$ 28.03	\$ 18.58	\$ 32.46	\$ 29.95	\$ 24.46	\$ 29.26	\$ 28.89
41	\$ 84	\$106	\$104	\$ 78	\$136	\$121	\$121	\$133	\$134
42	98	111	109	89	139	127	121	135	141
43	18	21	21	13	24	23	17	25	25
44	148	167	161	124	205	186	174	199	203
45	71.5	85.4	85.9	77.1	91.5	86.3	95.1	92.3	89.7
46	37.0	38.0	37.6	34.6	37.6	31.4	36.0	36.7	33.2
47	14.9	17.1	20.1	17.4	18.9	16.4	24.9	25.5	23.4
48	...	4	7	2.6	4.3	9.9	5	1.7	1.4
49	2.3	7.7	4.9	13.3	11.6	10.9	7.8	6.5	5.4
50	4.9	3.2	6.4	5.6	1.7	4.3	4.5	2.0	6.5
51	23.7	20.5	20.9	18.3	19.7	21.9	20.6	24.8	24.4
52	17.2	13.1	9.4	8.2	6.2	5.2	5.7	2.8	5.7
53	67.9	66.7	72.7	61.8	74.5	73.5	66.0	71.7	74.4
54	37.4	44.2	39.5	36.9	50.0	41.1	48.8	56.1	45.3
55	...	8.8	15.7	17.2	21.2	23.3	18.3	25.8	20.8
56	35.0	...	...	...	...	...	5.0	...	...
57	19.5	24.2	29.7	21.4	28.6	29.6	25.2	24.2	27.6
58	\$ 19.32	\$ 17.04	\$ 13.17	\$ 12.63	\$ 15.73	\$ 12.87	\$ 8.87	\$ 9.73	\$ 14.74
59	182	173	200	171	172	194	176	194	177
60	3.08	3.53	4.03	2.86	4.08	4.27	3.45	4.74	3.82
61	31.1	32.7	25.2	26.2	22.4	16.7	13.5	11.0	19.6
62	\$149	\$132	\$168	\$156	\$171	\$154	\$145	\$136	\$155
63	115	96	102	86	126	149	100	117	123
64	\$ 7.84	\$ 6.82	\$ 5.84	\$ 6.66	\$ 6.52	\$ 6.58	\$ 4.93	\$ 6.00	\$ 5.88
65	10.16	7.46	7.10	7.28	6.48	7.49	5.83	6.71	7.37
66	1.54	1.62	1.25	1.06	1.42	1.61	1.02	1.42	1.45
67	1.50	1.18	1.48	1.33	1.72	1.64	1.43	1.53	2.03

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—*Continued*

Accounting items	LaSalle	Cham- paign	Iroquois	Vermilion	Macon
Capital investment, total..... 1	\$57 315	\$43 292	\$38 760	\$39 027	\$47 342
Land..... 2	35 871	32 040	25 505	26 767	34 551
Farm improvements..... 3	7 830	3 766	4 717	4 441	4 064
Horses..... 4	236	197	317	225	271
Cattle..... 5	3 759	1 118	1 456	1 299	1 677
Hogs..... 6	692	408	330	533	426
Sheep..... 7	159	54	276	46	57
Poultry..... 8	117	97	113	83	106
Feed and grain..... 9	5 397	3 084	3 620	2 967	3 629
Machinery and equipment..... 10	3 254	2 528	2 426	2 666	2 561
Receipts, net increases, total..... 11	\$12 655	\$ 9 159	\$ 8 356	\$ 9 412	\$10 049
Cattle..... 12	2 809	719	989	763	1 269
Dairy sales..... 13	961	428	530	577	438
Hogs..... 14	3 253	1 364	1 450	1 916	1 666
Sheep..... 15	150	60	191	48	60
Poultry and eggs..... 16	403	378	407	280	311
Farm products used in household..... 17	310	264	275	299	270
Feed and grain..... 18	4 047	5 438	4 003	4 910	5 291
AAA payment..... 19	673	462	464	543	724
Labor and miscellaneous..... 20	49	46	47	76	20
Expenses, net decreases, total..... 21	\$ 3 200	\$ 2 154	\$ 2 484	\$ 2 738	\$ 2 598
Farm improvements..... 22	517	270	397	347	336
Feed and grain..... 23					
Machinery and equipment..... 24	1 064	931	905	1 119	1 097
Hired labor..... 25	785	324	486	471	442
Crop expenses..... 26	237	136	203	209	149
Taxes..... 27	408	398	381	448	476
Livestock and miscellaneous..... 28	189	95	112	144	98
Receipts less expenses..... 29	\$ 9 455	\$ 7 005	\$ 5 872	\$ 6 674	\$ 7 451
Unpaid labor..... 30	753	730	860	807	845
Net farm earnings..... 31	\$ 8 702	\$ 6 275	\$ 5 012	\$ 5 867	\$ 6 606
Rate earned on investment, percent..... 32	15.2	14.5	12.9	15.0	14.0
Labor and management earnings..... 33	\$ 6 401	\$ 4 709	\$ 3 705	\$ 4 516	\$ 4 863
Excess of sales over expenses..... 34	5 453	4 152	3 633	4 144	4 776
Increase in inventory..... 35	3 692	2 589	1 964	2 231	2 405
Number of farms included..... 36	51	80	54	42	38
Size of farm, acres..... 37	279	243	254	268	266
Gross earnings per acre..... 38	\$ 45.39	\$ 37.66	\$ 32.91	\$ 35.16	\$ 37.82
Total expenses per acre..... 39	14.18	11.86	13.17	13.24	12.96
Net earnings per acre..... 40	\$ 31.21	\$ 25.80	\$ 19.74	\$ 21.92	\$ 24.86
Value of land per acre..... 41	\$129	\$132	\$100	\$100	\$130
Value of improved land per acre..... 42	136	134	103	104	131
Value of improvements per acre..... 43	28	15	19	17	15
Total investment per acre..... 44	206	178	153	146	178
Percent of land area tillable..... 45	87.7	92.0	91.5	90.7	94.3
Percent of tillable land in—					
Corn..... 46	38.2	32.8	32.5	30.2	29.6
Oats..... 47	22.7	12.9	20.2	13.2	9.8
Wheat..... 48	1.8	3.6	1.5	7.0	9.2
Soybeans for grain..... 49	4.4	26.5	13.0	21.6	24.0
Other cultivated crops..... 50	4.5	3.6	6.4	5.1	1.2
Legume hay and pasture..... 51	21.6	13.7	18.7	12.9	15.5
Nonlegume hay and pasture..... 52	6.8	6.9	7.7	10.0	10.7
Bushels per acre: Corn..... 53	74.6	66.5	61.0	67.1	70.0
Oats..... 54	53.1	46.4	49.8	50.6	46.6
Wheat..... 55	26.4	20.3	40.6	26.7	26.1
Barley..... 56		28.0	30.0		
Soybeans..... 57	22.5	29.3	23.5	26.1	25.3
Feed fed per acre to livestock..... 58	\$ 15.06	\$ 6.64	\$ 8.46	\$ 7.63	\$ 8.14
Returns for \$100 feed fed..... 59	186	195	176	187	183
Poultry returns per hen..... 60	3.88	3.95	3.94	3.71	3.74
Number of litters farrowed..... 61	22.5	12.4	12.1	16.4	15.2
Returns per litter..... 62	\$143	\$136	\$143	\$148	\$137
Dairy returns per cow..... 63	140	96	96	100	113
Horse and machinery cost per crop acre..... 64	\$ 5.84	\$ 5.39	\$ 5.42	\$ 5.96	\$ 5.83
Labor cost per crop acre..... 65	7.40	5.44	6.92	5.89	6.11
Improvement cost per acre..... 66	1.85	1.11	1.56	1.30	1.26
Taxes per acre..... 67	1.46	1.64	1.50	1.67	1.79

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS* BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—Continued

	Sanga- mon	Kanka- kee	Menard	Will	DeWitt	Kendall	Coles, Edgar	Moultrie	Piatt, Douglas
1	\$41 027	\$35 898	\$35 206	\$34 587	\$40 339	\$45 641	\$50 556	\$45 935	\$57 393
2	28 127	23 348	24 052	21 289	28 034	27 877	35 247	33 676	42 584
3	4 507	4 531	3 355	4 730	3 677	7 185	4 939	3 857	4 901
4	307	206	255	216	188	272	313	276	283
5	2 457	1 617	1 368	2 390	2 166	2 750	1 867	2 012	1 333
6	728	215	733	375	404	912	684	348	502
7	79	17	100	13	190	96	59	73	149
8	82	107	121	146	64	156	97	87	90
9	2 471	3 300	2 954	2 751	3 060	3 827	4 187	3 070	4 454
10	2 269	2 557	2 268	2 677	2 556	2 566	3 163	2 536	3 097
11	\$ 9 050	\$ 8 187	\$ 8 126	\$ 7 699	\$10 389	\$10 031	\$11 816	\$10 185	\$11 812
12	2 104	773	1 153	1 573	1 677	2 035	2 032	1 668	889
13	512	1 108	222	1 231	560	1 046	492	636	489
14	3 056	951	2 975	1 126	1 818	4 069	3 388	1 426	2 054
15	84	24	105	14	158	152	66	83	121
16	232	451	406	510	166	566	345	274	277
17	282	250	299	237	276	253	275	293	310
18	2 336	4 058	2 418	2 641	5 133	1 421	4 607	5 143	7 058
19	405	511	503	327	552	450	517	602	559
20	39	61	45	40	49	39	94	60	55
21	\$ 2 840	\$ 2 185	\$ 2 140	\$ 1 956	\$2 437	\$ 2 729	\$ 3 118	\$ 2 799	\$ 3 018
22	379	253	257	249	277	447	360	317	347
23	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	1 041	901	843	819	942	904	1 173	1 143	1 171
25	694	417	428	364	505	622	760	552	606
26	176	199	145	137	143	227	192	199	254
27	393	294	354	267	456	341	494	476	525
28	157	121	113	120	114	188	139	112	115
29	\$ 6 210	\$ 6 002	\$ 5 986	\$ 5 743	\$ 7 952	\$ 7 302	\$ 8 698	\$ 7 386	\$ 8 794
30	713	783	771	878	806	764	778	761	770
31	\$ 5 497	\$ 5 219	\$ 5 215	\$ 4 865	\$ 7 146	\$ 6 538	\$ 7 920	\$ 6 625	\$ 8 024
32	13.4	14.5	14.8	14.1	17.7	14.3	15.7	14.4	14.0
33	\$ 4 008	\$ 4 041	\$ 4 022	\$ 3 762	\$ 5 699	\$ 4 865	\$ 5 955	\$ 4 922	\$ 5 733
34	3 237	3 360	3 643	3 173	4 064	3 885	4 863	4 437	5 613
35	2 691	2 392	2 044	2 333	3 612	3 164	3 560	2 656	2 871
36	47	40	31	38	30	31	42	41	36
37	267	239	248	214	268	232	324	303	307
38	\$ 33.86	\$ 34.30	\$ 32.78	\$ 35.94	\$ 38.78	\$ 43.22	\$ 36.41	\$ 33.66	\$ 38.52
39	13.29	12.44	11.74	13.23	12.11	15.05	12.00	11.77	12.35
40	\$ 20.57	\$ 21.86	\$ 21.04	\$ 22.71	\$ 26.67	\$ 28.17	\$ 24.41	\$ 21.89	\$ 26.17
41	\$105	\$ 98	\$ 97	\$ 99	\$105	\$120	\$109	\$111	\$139
42	108	102	100	100	110	126	113	115	140
43	17	19	14	22	14	31	15	13	16
44	153	150	142	161	151	197	156	152	187
45	88.4	91.0	84.6	90.2	86.9	86.6	88.8	89.5	93.3
46	29.5	32.2	28.8	33.2	33.4	35.7	28.4	28.4	29.5
47	10.0	20.6	10.0	24.4	14.0	26.4	11.3	8.8	10.7
48	12.5	1.7	17.9	2.1	5.6	1.3	9.6	6.9	7.1
49	15.6	16.4	13.1	12.4	19.2	5.0	17.6	25.3	29.6
50	3.0	7.4	5.2	4.3	2.2	5.4	4.6	6.1	2.6
51	16.5	14.0	15.3	14.9	17.1	18.6	15.8	16.8	13.6
52	12.9	7.7	9.7	8.7	8.5	7.6	12.7	7.7	6.9
53	65.3	61.6	66.2	56.1	72.7	66.4	70.8	69.2	73.2
54	50.6	50.8	45.2	52.7	52.5	56.5	50.9	50.5	49.6
55	23.6	23.3	23.1	26.5	22.8	28.1	22.4	23.2	23.4
56	10.0	.....	.....	.....	.....	50.0	27.1	11.1	.....
57	22.0	20.5	22.2	21.3	29.7	23.7	24.5	25.1	27.4
58	\$ 13.98	\$ 8.27	\$ 11.67	\$ 12.60	\$ 8.57	\$ 19.69	\$ 11.78	\$ 8.02	\$ 7.13
59	166	177	176	172	200	177	171	178	186
60	3.57	4.85	3.64	3.55	2.96	3.92	4.61	3.22	3.68
61	24.7	8.1	25.0	8.1	14.7	27.9	23.5	13.9	16.0
62	\$136	\$155	\$133	\$159	\$141	\$168	\$155	\$157	\$149
63	96	145	71	157	112	149	103	122	115
64	\$ 6.31	\$ 5.43	\$ 5.82	\$ 5.52	\$ 5.29	\$ 6.08	\$ 5.75	\$ 5.54	\$ 5.06
65	7.29	6.24	6.93	7.14	6.48	7.87	6.55	5.60	5.26
66	1.42	1.06	1.04	1.16	1.03	1.93	1.11	1.05	1.13
67	1.47	1.23	1.43	1.25	1.70	1.47	1.52	1.57	1.71

(Continued)

TABLE 13. SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—*Continued*

Accounting items	Logan	Mason	Cass	Grundy	Morgan
Capital investment, total..... 1	\$38 823	\$32 058	\$36 701	\$44 536	\$34 188
Land..... 2	27 156	20 950	25 084	29 566	22 643
Farm improvements..... 3	3 876	4 094	3 152	5 628	3 359
Horses..... 4	261	346	388	300	312
Cattle..... 5	1 603	832	1 768	1 536	1 787
Hogs..... 6	441	267	652	398	658
Sheep..... 7	29	2	68	13	254
Poultry..... 8	131	125	98	106	91
Feed and grain..... 9	2 826	3 191	3 233	4 125	2 768
Machinery and equipment..... 10	2 500	2 251	2 258	2 864	2 316
Receipts, net increases, total..... 11	\$ 8 774	\$ 6 634	\$ 8 743	\$11 106	\$ 9 014
Cattle..... 12	1 011	639	1 365	1 052	1 497
Dairy sales..... 13	340	237	279	1 134	451
Hogs..... 14	2 053	1 087	2 872	1 795	3 013
Sheep..... 15	49	11	115	18	132
Poultry and eggs..... 16	464	469	339	401	282
Farm products used in household..... 17	281	232	332	280	277
Feed and grain..... 18	3 959	3 337	2 787	5 707	2 809
AAA payment..... 19	583	590	624	675	505
Labor and miscellaneous..... 20	34	32	30	44	48
Expenses, net decreases, total..... 21	\$ 2 173	\$ 2 130	\$ 2 390	\$ 2 406	\$ 1 989
Farm improvements..... 22	277	288	271	335	224
Feed and grain..... 23	.....	.....	.....	.....	.....
Machinery and equipment..... 24	921	748	923	934	732
Hired labor..... 25	364	479	493	481	421
Crop expenses..... 26	160	155	170	194	180
Taxes..... 27	363	348	387	309	315
Livestock and miscellaneous..... 28	88	112	146	153	117
Receipts less expenses..... 29	\$ 6 601	\$ 4 504	\$ 6 353	\$ 8 700	\$ 7 025
Unpaid labor..... 30	810	709	903	786	838
Net farm earnings..... 31	\$ 5 791	\$ 3 795	\$ 5 450	\$ 7 914	\$ 6 187
Rate earned on investment, percent..... 32	14.9	11.8	14.8	17.8	18.1
Labor and management earnings..... 33	\$ 4 472	\$ 2 762	\$ 4 172	\$ 6 314	\$ 5 096
Excess of sales over expenses..... 34	3 885	2 517	3 909	5 432	4 491
Increase in inventory..... 35	2 435	1 755	2 112	2 988	2 257
Number of farms included..... 36	32	33	28	18	40
Size of farm, acres..... 37	243	303	310	266	235
Gross earnings per acre..... 38	\$ 36.15	\$ 21.87	\$ 28.17	\$ 41.69	\$ 38.39
Total expenses per acre..... 39	12.29	9.36	10.61	11.98	12.04
Net earnings per acre..... 40	\$ 23.86	\$ 12.51	\$ 17.56	\$ 29.71	\$ 26.35
Value of land per acre..... 41	\$112	\$ 69	\$ 81	\$111	\$ 96
Value of improved land per acre..... 42	116	71	94	117	103
Value of improvements per acre..... 43	16	13	10	21	14
Total investment per acre..... 44	160	106	118	167	146
Percent of land area tillable..... 45	90.8	90.2	78.0	87.4	84.4
Percent of tillable land in—					
Corn..... 46	30.0	26.4	27.0	36.8	30.0
Oats..... 47	12.3	12.6	11.8	20.6	10.4
Wheat..... 48	14.8	20.8	17.7	8	18.0
Soybeans for grain..... 49	15.5	5.6	9.2	15.3	13.8
Other cultivated crops..... 50	3.9	11.2	5.1	5.5	1.2
Legume hay and pasture..... 51	14.4	20.2	19.5	17.4	16.9
Nonlegume hay and pasture..... 52	9.1	3.2	9.7	3.6	9.7
Bushels per acre: Corn..... 53	68.4	47.3	65.5	74.2	69.5
Oats..... 54	50.7	35.7	40.0	55.1	45.1
Wheat..... 55	23.4	35.7	25.3	23.0	25.4
Barley..... 56	.....	10.0	.....	.....	15.0
Soybeans..... 57	25.8	20.2	20.6	23.5	24.4
Feed fed per acre..... 58	\$ 8.64	\$ 4.60	\$ 8.93	\$ 8.41	\$ 12.64
Returns for \$100 feed fed..... 59	197	188	189	206	188
Poultry returns per hen..... 60	3.71	3.51	3.50	4.62	3.45
Number of litters farrowed..... 61	17.0	11.1	20.0	12.6	23.1
Returns per litter..... 62	\$151	\$115	\$125	\$144	\$145
Dairy returns per cow..... 63	102	83	79	153	101
Horse and machinery cost per crop acre..... 64	\$ 5.45	\$ 4.26	\$ 5.97	\$ 5.18	\$ 5.43
Labor cost per crop acre..... 65	6.14	5.33	7.11	6.10	7.45
Improvement cost per acre..... 66	1.14	.95	.87	1.26	.95
Losses per acre..... 67	1.50	1.15	1.25	1.16	1.34

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—Continued

	Macou-pin	Shelby	Christian	Montgomery	Adams	Schuyler, Scott, Brown	Jersey	Greene	Pike
1	\$28 185	\$28 372	\$33 031	\$22 127	\$26 105	\$25 022	\$26 245	\$31 406	\$25 231
2	14 972	17 877	22 236	12 837	14 939	15 088	14 797	18 308	14 479
3	4 685	3 505	3 390	3 114	3 916	3 425	3 886	4 493	3 419
4	312	214	224	388	307	309	386	379	325
5	2 673	1 332	1 736	1 447	1 921	1 554	2 001	2 750	2 385
6	469	316	501	504	775	674	554	697	1 104
7	117	72	55	145	129	97	76	82	140
8	123	112	90	82	73	54	114	69	55
9	2 581	2 544	2 626	1 995	2 127	2 137	2 283	2 519	1 814
10	2 253	2 400	2 173	1 615	1 918	1 684	2 148	2 109	1 510
11	\$ 7 918	\$ 6 683	\$ 8 482	\$ 6 143	\$ 6 750	\$ 6 778	\$ 7 353	\$ 7 824	\$ 7 964
12	2 025	930	1 516	1 094	1 519	1 256	970	2 683	1 872
13	1 541	853	608	582	361	214	1 642	862	157
14	1 977	1 289	2 284	2 256	3 003	2 928	2 319	3 002	4 897
15	112	103	88	94	148	94	86	103	194
16	516	325	282	261	261	152	360	211	197
17	278	280	265	292	261	272	335	299	297
18	988	2 642	2 966	1 174	851	1 439	1 483	269	.....
19	388	212	430	256	311	400	122	330	277
20	93	49	43	46	35	23	36	65	73
21	\$ 2 128	\$ 2 155	\$ 2 061	\$ 1 682	\$ 1 860	\$ 1 879	\$ 2 231	\$ 2 304	\$ 2 019
22	368	301	290	241	314	232	337	281	304
23	.....	.....	.....	.....	.....	.....	.....	.....	177
24	794	899	778	656	666	608	807	821	550
25	440	364	387	305	372	452	524	559	454
26	142	158	135	127	112	141	133	163	122
27	250	308	359	243	261	332	266	333	276
28	134	125	112	110	135	114	164	147	136
29	\$ 5 790	\$ 4 528	\$ 6 421	\$ 4 461	\$ 4 890	\$ 4 899	\$ 5 122	\$ 5 520	\$ 5 945
30	932	892	822	841	839	784	1 074	782	744
31	\$ 4 858	\$ 3 636	\$ 5 599	\$ 3 620	\$ 4 051	\$ 4 115	\$ 4 048	\$ 4 738	\$ 5 201
32	17.2	12.8	17.0	16.4	15.5	16.4	15.4	15.1	20.6
33	\$ 4 061	\$ 2 844	\$ 4 553	\$ 3 118	\$ 3 307	\$ 3 437	\$ 3 377	\$ 3 750	\$ 4 549
34	3 228	2 657	3 422	2 422	2 252	2 764	2 554	2 753	2 459
35	2 284	1 591	2 734	1 747	2 377	1 863	2 233	2 468	3 189
36	36	41	39	36	39	46	26	29	30
37	253	260	228	225	250	265	244	266	279
38	\$ 31.25	\$ 25.68	\$ 37.17	\$ 27.27	\$ 26.95	\$ 25.56	\$ 30.14	\$ 29.39	\$ 28.57
39	12.08	11.71	12.63	11.20	10.78	10.04	13.55	11.59	9.91
40	\$ 19.17	\$ 13.97	\$ 24.54	\$ 16.07	\$ 16.17	\$ 15.52	\$ 16.59	\$ 17.80	\$ 18.66
41	\$ 59	\$ 69	\$ 97	\$ 57	\$ 60	\$ 57	\$ 61	\$ 69	\$ 52
42	64	73	100	62	67	68	69	78	61
43	18	13	15	14	16	13	16	17	12
44	111	109	145	98	104	94	108	118	91
45	79.0	84.7	91.9	84.8	76.0	68.4	83.0	73.4	74.3
46	21.4	26.2	23.9	21.0	22.7	27.6	26.5	30.2	25.7
47	9.7	9.9	6.8	9.7	17.6	13.7	6.1	7.3	12.8
48	15.0	8.5	12.3	13.5	9.5	11.1	17.8	14.7	5.8
49	8.4	17.9	28.5	14.2	8.6	6.7	2.4	5.7	1.1
50	8.1	4.4	3.0	8.7	4.5	4.1	7.1	6.5	6.1
51	23.4	16.8	12.9	16.5	24.8	26.1	25.3	25.1	29.6
52	14.0	16.3	12.6	16.4	12.3	10.7	14.8	10.5	18.9
53	65.1	57.1	66.5	61.0	57.9	63.0	66.0	65.4	68.4
54	43.2	38.7	45.2	45.6	43.8	45.9	38.1	41.0	38.0
55	23.9	20.1	19.8	17.9	21.4	22.9	24.3	38.5	22.2
56	30.6	25.0	20.0	25.1	.....	16.7	33.0	26.8	26.6
57	19.2	19.7	26.0	23.0	21.3	18.5	17.6	18.9	17.7
58	\$ 13.48	\$ 7.41	\$ 12.21	\$ 11.21	\$ 11.30	\$ 9.21	\$ 11.57	\$ 15.26	\$ 14.31
59	187	191	179	182	194	199	200	175	189
60	4.44	2.70	3.29	2.95	3.40	3.16	3.55	3.58	3.29
61	15.4	10.1	15.8	14.8	23.1	19.7	19.2	19.3	35.0
62	\$147	\$156	\$141	\$160	\$144	\$136	\$144	\$149	\$140
63	165	114	108	101	86	75	146	130	78
64	\$ 6.07	\$ 5.92	\$ 5.21	\$ 5.82	\$ 6.25	\$ 5.96	\$ 7.14	\$ 6.89	\$ 5.80
65	8.36	7.09	6.85	7.67	9.04	9.48	11.03	9.04	9.80
66	1.45	1.16	1.27	1.07	1.25	.87	1.38	1.06	1.09
67	.99	1.18	1.57	1.08	1.04	1.25	1.09	1.25	.99

(Continued)

TABLE 13. SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—*Continued*

Accounting items	Madison	Randolph	St. Clair	Monroe	Bond
Capital investment, total.....	1 \$18 339	\$15 782	\$22 775	\$20 104	\$21 224
Land.....	2 9 428	8 058	12 946	12 341	11 201
Farm improvements.....	3 2 845	2 584	3 490	2 478	3 501
Horses.....	4 346	384	504	380	249
Cattle.....	5 1 513	1 391	1 152	668	1 739
Hogs.....	6 247	185	306	255	434
Sheep.....	7 26	41	25	17	145
Poultry.....	8 112	103	174	150	68
Feed and grain.....	9 1 904	1 557	1 980	1 836	1 806
Machinery and equipment.....	10 1 918	1 479	2 198	1 979	2 081
Receipts, net increases, total.....	11 \$ 4 697	\$ 3 757	\$ 4 882	\$ 4 595	\$ 5 567
Cattle.....	12 574	824	560	294	724
Dairy sales.....	13 1 685	844	1 017	767	1 797
Hogs.....	14 899	895	1 186	976	2 146
Sheep.....	15 23	41	33	27	190
Poultry and eggs.....	16 359	378	517	597	217
Farm products used in household.....	17 263	265	342	320	253
Feed and grain.....	18 713	319	1 132	1 575	.....
AAA payment.....	19 132	124	65	10	175
Labor and miscellaneous.....	20 49	67	30	29	65
Expenses, net decreases, total.....	21 \$ 1 476	\$ 1 228	\$ 1 733	\$ 1 578	\$ 2 015
Farm improvements.....	22 200	176	235	167	318
Feed and grain.....	23 .....	.....	.....	.....	68
Machinery and equipment.....	24 619	514	719	573	806
Hired labor.....	25 269	192	339	342	361
Crop expenses.....	26 116	97	113	132	132
Taxes.....	27 161	179	238	226	216
Livestock and miscellaneous.....	28 111	70	89	138	114
Receipts less expenses.....	29 \$ 3 221	\$ 2 529	\$ 3 149	\$ 3 017	\$ 3 552
Unpaid labor.....	30 825	823	833	877	664
Net farm earnings.....	31 \$ 2 396	\$ 1 706	\$ 2 316	\$ 2 140	\$ 2 888
Rate earned on investment, percent.....	32 13.1	10.8	10.2	10.6	13.6
Labor and management earnings.....	33 \$ 1 974	\$ 1 424	\$ 1 683	\$ 1 643	\$ 2 263
Excess of sales over expenses.....	34 2 128	1 669	1 567	1 611	2 116
Increase in inventory.....	35 830	595	1 240	1 086	1 183
Number of farms included.....	36 81	48	32	24	28
Size of farm, acres.....	37 172	228	218	224	285
Gross earnings per acre.....	38 \$ 27.32	\$ 16.49	\$ 22.41	\$ 20.50	\$ 19.51
Total expenses per acre.....	39 13.38	9.00	11.78	10.95	9.39
Net earnings per acre.....	40 \$ 13.94	\$ 7.49	\$ 10.63	\$ 9.55	\$ 10.12
Value of land per acre.....	41 \$ 55	\$ 35	\$ 59	\$ 55	\$ 39
Value of improved land per acre.....	42 58	38	64	65	42
Value of improvements per acre.....	43 17	11	16	11	12
Total investment per acre.....	44 107	69	105	90	74
Percent of land area tillable.....	45 77.8	82.6	80.4	77.1	79.7
Percent of tillable land in.....					
Corn.....	46 20.5	11.6	18.7	15.6	15.4
Oats.....	47 7.0	7.8	10.2	4.9	10.5
Wheat.....	48 24.7	24.3	26.8	33.2	12.0
Soybeans for grain.....	49 2.1	1.5	4.8	2.3	5.2
Other cultivated crops.....	50 12.4	13.3	13.3	11.0	13.9
Legume hay and pasture.....	51 24.2	34.1	19.6	28.2	26.2
Nonlegume hay and pasture.....	52 9.1	7.4	6.6	4.8	16.8
Bushels per acre: Corn.....	53 52.2	30.9	45.1	50.6	43.8
Oats.....	54 41.3	35.5	38.9	37.4	31.2
Wheat.....	55 22.4	35.6	43.8	26.5	16.9
Barley.....	56 31.5	32.9	40.0	37.1	29.8
Soybeans.....	57 9.3	5.2	9.5	7.7	9.1
Feed fed per acre.....	58 \$ 10.55	\$ 7.70	\$ 8.12	\$ 6.92	\$ 9.76
Returns for \$100 feed fed.....	59 206	181	202	186	189
Poultry returns per hen.....	60 3.36	3.15	3.25	3.47	2.85
Number of litters farrowed.....	61 7.7	7.2	9.8	9.1	14.5
Returns per litter.....	62 \$139	\$151	\$147	\$128	\$149
Dairy returns per cow.....	63 151	115	137	129	160
Horse and machinery cost per crop acre.....	64 \$ 7.14	\$ 5.23	\$ 6.81	\$ 6.30	\$ 6.10
Labor cost per crop acre.....	65 9.42	7.90	8.36	9.33	6.66
Improvement cost per acre.....	66 1.16	.77	1.08	.75	1.11
Losses per acre.....	67 .94	.79	1.09	1.01	.76

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,090 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1941—*Concluded*

	Clinton, Washing- ton	Effingham, Fayette	Jefferson, Franklin, Hamilton, William- son	Clark, Jasper, Crawford	Richland, Clay, Marion	Edwards	Wabash, Lawrence, White, Gallatin	Alexander, Jackson, Johnson, Pope, Perry, Massac, Union
1	\$17 778	\$15 945	\$11 836	\$17 344	\$12 638	\$14 603	\$16 085	\$12 384
2	9 781	7 961	6 078	9 327	6 565	8 511	9 414	6 049
3	2 553	2 666	1 992	2 711	1 933	1 832	2 256	2 299
4	373	313	328	218	302	295	276	396
5	1 077	1 404	905	1 206	1 102	847	892	878
6	214	167	216	406	212	309	247	199
7	42	121	70	53	210	83	64	40
8	170	163	92	152	102	142	103	97
9	1 582	1 564	836	1 569	873	1 287	1 381	1 068
10	1 986	1 586	1 319	1 702	1 339	1 297	1 452	1 358
11	\$ 3 887	\$ 4 437	\$ 3 101	\$ 4 813	\$ 3 655	\$ 4 091	\$ 4 610	\$ 3 315
12	456	980	562	835	572	585	646	569
13	1 259	858	317	350	481	179	315	559
14	660	786	974	1 743	787	1 425	1 242	825
15	49	166	96	52	224	91	83	47
16	517	453	302	491	315	496	241	260
17	268	303	301	298	268	282	251	278
18	468	668	349	795	797	812	1 612	591
19	170	181	148	196	156	176	193	137
20	40	42	52	53	55	45	27	49
21	\$ 1 404	\$ 1 286	\$ 1 266	\$ 1 485	\$ 1 131	\$ 1 319	\$ 1 370	\$ 1 464
22	172	190	202	184	203	185	205	239
23	574	493	483	609	410	492	524	535
24	264	249	228	290	178	250	222	313
25	148	99	188	126	100	135	143	156
26	152	163	128	190	178	205	204	159
27	94	92	37	86	62	52	72	62
28	\$ 2 483	\$ 3 151	\$ 1 835	\$ 3 328	\$ 2 524	\$ 2 772	\$ 3 240	\$ 1 851
29	843	734	621	725	690	633	660	663
30	\$ 1 640	\$ 2 417	\$ 1 214	\$ 2 603	\$ 1 834	\$ 2 139	\$ 2 580	\$ 1 188
31	9.2	15.2	10.3	15.0	14.5	14.6	16.0	9.6
32	\$ 1 256	\$ 2 070	\$ 1 064	\$ 2 238	\$ 1 652	\$ 1 886	\$ 2 235	\$ 1 018
33	1 712	1 718	882	2 026	1 286	1 425	1 564	990
34	503	1 130	652	1 004	970	1 065	1 425	583
35								
36	49	45	45	46	30	41	39	34
37	194	237	232	237	284	218	224	232
38	\$ 20.05	\$ 18.70	\$ 13.37	\$ 20.29	\$ 12.85	\$ 18.73	\$ 20.58	\$ 14.31
39	11.59	8.51	8.13	9.32	6.40	8.94	9.06	9.18
40	\$ 8.46	\$ 10.19	\$ 5.24	\$ 10.97	\$ 6.45	\$ 9.79	\$ 11.52	\$ 5.13
41	\$ 50	\$ 34	\$ 26	\$ 39	\$ 23	\$ 39	\$ 42	\$ 26
42	54	37	27	42	24	42	45	30
43	13	11	9	11	7	8	10	10
44	92	67	51	73	44	67	72	53
45	85.0	78.8	84.0	81.0	80.6	83.7	83.3	75.6
46	14.0	20.2	16.2	25.2	15.7	21.5	24.4	15.5
47	13.5	9.0	5.0	5.6	7.2	8.6	5.5	4.7
48	27.7	9.7	10.2	12.7	5.3	12.8	19.0	11.8
49	1.8	7.0	1.9	5.8	4.8	4.2	5.8	2.8
50	12.6	9.5	11.9	10.7	10.9	13.3	12.7	15.5
51	19.7	18.9	32.5	19.9	17.4	21.8	22.1	30.6
52	10.7	25.7	22.3	20.1	38.7	17.8	10.5	19.1
53	32.4	40.9	26.6	50.9	27.9	47.1	48.6	34.0
54	38.1	30.5	26.2	35.4	34.2	43.7	37.9	29.8
55	16.8	35.0	42.2	19.8	19.0	35.8	23.4	21.5
56	32.4	21.3	27.2	24.3	27.2	36.5	30.6	27.8
57	10.3	13.3	8.6	12.2	10.5	12.6	19.2	13.5
58	\$ 8.98	\$ 6.84	\$ 5.28	\$ 8.94	\$ 4.05	\$ 7.33	\$ 6.09	\$ 5.22
59	181	214	202	174	224	187	200	204
60	2.93	2.75	3.67	3.35	2.95	3.07	2.91	3.05
61	6.5	6.8	8.3	12.9	6.4	10.4	9.0	7.6
62	\$142	\$158	\$157	\$146	\$147	\$155	\$156	\$135
63	149	120	82	91	89	87	93	98
64	\$ 5.85	\$ 4.78	\$ 5.15	\$ 5.20	\$ 3.50	\$ 5.21	\$ 4.86	6.47
65	8.45	7.22	7.11	7.17	5.29	6.86	6.58	9.03
66	.89	.80	.87	.78	.71	.85	.92	1.03
67	.78	.69	.55	.80	.63	.94	.91	.69

Agricultural Economics
RADIO BROADCASTS
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580 Kilocycles

Every Friday at 12:30 p.m.

August 7—Rural Life Forum. "Rural Organizations and the Wartime Educational Program"—D. E. Lindstrom, F. E. Longmire.

"Market Review and Farm Outlook"—G. L. Jordan.¹

August 14—"Farm Earnings in Wartime"—P. E. Johnston, J. B. Cunningham, W. N. Thompson.

August 21—"Planning for Wartime Maximum Production"—H. C. M. Case, E. L. Sauer, S. I. Warren.

August 28—"Can We Store the Soybean Crop?"—L. J. Norton, L. F. Stice.

September 4—Rural Life Forum. "How to Plan Successful Neighborhood and Community Meetings to Meet Wartime Needs"—D. E. Lindstrom, E. H. Regnier.

September 11—"Planning Feeding Cattle Operations for 1943"—P. E. Johnston, H. G. Russell, L. F. Stice.

September 18—"Harvesting Costs"—R. H. Wilcox, R. C. Ross, W. E. McDaniel.

September 25—"How Is the Battle Against Inflation Going?"—E. J. Working, R. J. Mutti, A. H. Harrington.

¹Each Friday, 12:48 p.m., "Market Review and Farm Outlook"—G. L. Jordan.

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Works. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period....	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929.....	95	105	104	99	103	103	104	110	110	110
1930.....	86	88	89	94	83	87	93	100	89	91
1931.....	73	65	62	80	58	58	72	84	68	75
1932.....	65	48	41	69	43	43	62	66	47	58
1933.....	66	51	45	71	49	51	72	62	50	69
1934.....	75	65	61	80	57	55	69	72	64	75
1935.....	80	79	82	81	64	65	80	78	74	87
1936.....	81	81	86	80	74	82	103	89	86	103
1937.....	86	86	96	84	80	87	103	98	102	113
1938.....	79	69	69	80	72	81	101	92	78	89
1939.....	77	65	65	78	72	81	97	99	92	108
1940.....	78	68	69	79	78	90	113	106	105	123
1941.....	87	82	87	85	101	116	136	129	149	155
1941 June.....	87	82	87	83	96	105	126	130	152	159
July.....	89	86	91	84	98	103	123	131	153	160
Aug.....	90	87	92	86	102	111	129	135	158	160
Sept.....	92	91	99	88	110	123	140	134	163	161
Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	135	165	166
Dec.....	94	95	99	92	134	162	176	139	170	167
1942 Jan.....	96	100	104	94	132	146	155	143	174	171
Feb.....	97	101	106	95	127	134	141	147	178	172
Mar.....	98	103	108	97	127	154	159	...	183	171
Apr.....	99	104	111	98	136	143	...	...	187	173
May.....	99	104	112 ¹¹	99	130	...	...	...	193	176 ¹¹
June.....	98 ¹¹	105 ¹¹	...	99	...	...	...	...	...	...

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			June 1941	Current months		
	1924-29	1940	1941		April	May	June
Corn, bu.....	\$.81	\$.56	\$.63	\$.68	\$.76	\$.78	\$.79
Oats, bu.....	.42	.32	.36	.33	.52	.52	.45
Wheat, bu.....	1.30	.81	.93	.90	1.10	1.10	1.06
Barley, bu.....	.66	.46	.55	.50	.78	.78	.74
Soybeans, bu.....	1.94	.82	1.24	1.25	1.73	1.68	1.58
Hogs, cwt.....	9.97	5.54	9.37	9.30	13.70	13.40	13.60
Beef cattle, cwt.....	8.57	8.84	10.07	9.90	11.90	11.90	11.60
Lambs, cwt.....	12.22	8.52	9.85	10.20	11.40	12.20	13.10
Milk cows, head.....	78.00	65.00	80.00	80.00	100.00	100.00	98.00
Veal calves, cwt.....	11.27	9.63	11.19	10.20	13.50	13.40	13.30
Sheep, cwt.....	6.52	3.44	4.43	4.35	6.00	6.10	6.00
Butterfat, lb.....	.42	.27	.33	.34	.36	.37	.36
Milk, cwt.....	2.32	1.67	2.05	1.90	2.20	2.20	2.10
Eggs, doz.....	.30	.17	.22	.22	.25	.26	.26
Chickens, lb.....	.21	.13	.15	.16	.19	.19	.19
Apples, lb.....	.36	.30	.37	.40	.41	.43	.40
Wool, bu.....	1.59	1.14	1.07	1.25	1.65	2.10	1.75
Hay, ton.....	13.88	6.68	8.49	7.40	13.00	12.60	10.60
Potatoes, bu.....	1.39	.83	.82	.95	1.40	1.60	1.75

¹²For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor August, 1942 Number 87

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THE CURRENT SITUATION AND OUTLOOK

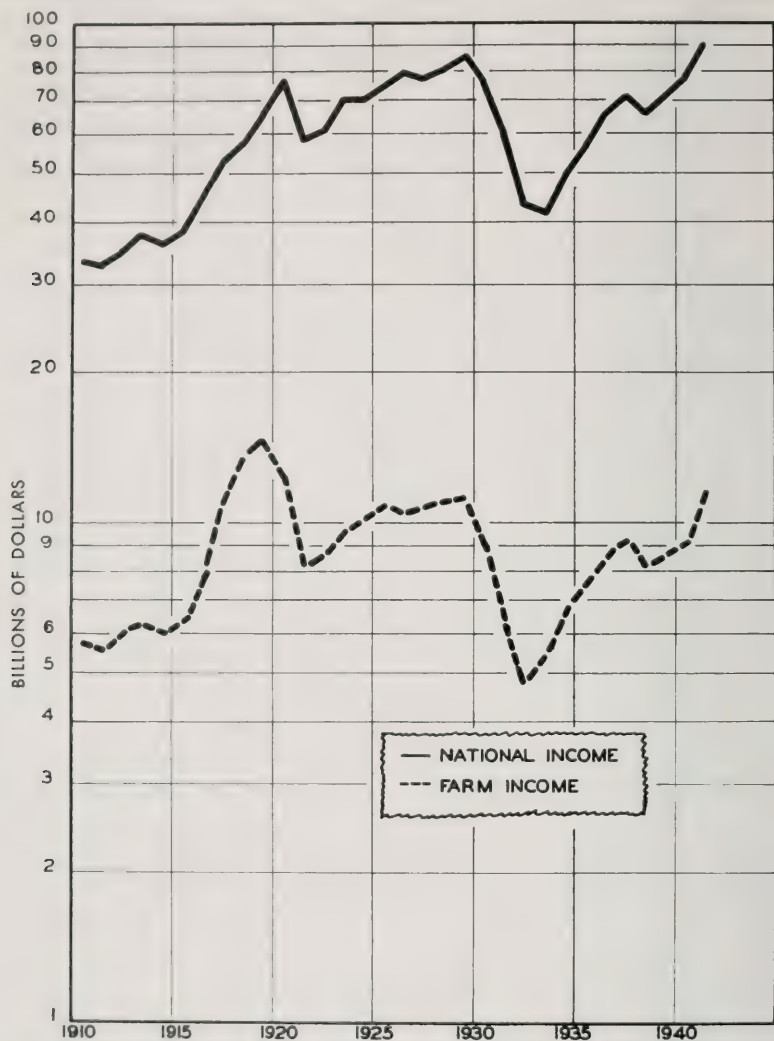
Prices. Wholesale and retail prices have been stabilized, temporarily at least, at the May 1 level. The Bureau of Labor Statistics Index of spot market prices of 28 basic commodities was 166.7 percent of the August 1939 level April 30, 1942, and 167.2 percent August 13. Prices of individual farm products have varied considerably. In general, prices of livestock and livestock products have been strong, and prices of grain have been weak.

With price ceilings on pork, beef, and lamb and some possibility of ceilings being placed on other livestock product prices, it is probable that grain prices will be higher after harvest in relation to prices of animal products. The livestock-feed ratio is likely to continue to be favorable to the hog producer but may be less satisfactory for the cattle feeder and dairyman.

Domestic demand. Industrial activity increased further in July and the first half of August, according to the Federal Reserve Board. The index stood at 180 percent of the 1923-25 average in July, compared with 176 in June and 160 in July 1941 after adjustments for usual seasonal variations. The great increase has been in durable goods production, reflecting the increased output of war materials. The value of construction contracts also increased from June to July, reaching 208 percent of the 1923-25 level. The increase was in non-residential construction.

In general, national income is increasing rapidly as indicated in Figure 1.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.



NATIONAL INCOME AND FARM INCOME, U. S., 1910-1941

The level of income payments reached a new peak in June at 95 billion dollars. This rapid increase in national income is made possible by an expansion in bank credit. Bank loans have declined somewhat during 1942, but bank investments have increased rapidly. The federal reserve banks have also expanded the amount of credit outstanding. They used this expanded credit to purchase Government securities. The reserve requirements of New York and Chicago banks were lowered in August.

thereby relieving a local tight credit situation. If the Government debt is to be carried largely by the banks, further reductions in reserve requirements will be necessary. Bank credit expansion is inflationary. A bank loan to an individual or to the Government results in increased buying power for the borrower without any reduction in buying power for anyone else.

Agricultural production. Bumper crops are indicated for 1942. Livestock production is increasing so rapidly that it is anticipated that feed grain carry-over will be reduced in 1943 below the moderate carry-over of 1942.

The Government crop report issued August 10 indicated probable grain production this year as the highest on record for any year except 1920. It is estimated that the wheat crop will be the second largest on record, the corn crop, the largest in ten years, and the oats crop, the best since 1925. Comparisons with last year's production are shown below.

	1942	1941	10-year average, 1930-1939
	(million bushels)		
Corn.....	2 754	2 673	2 307
All wheat.....	955	946	748
Winter wheat.....	698	671	569
Spring wheat.....	257	275	179
Oats.....	1 332	1 176	1 007
Barley.....	417	359	.....
Rye.....	60	45	.....

Since that report was made, the Government's weekly crop bulletins indicate that crops are doing fine. A special mid-August spring wheat estimate by the Government raised the August 1 estimate by 15 million bushels. Terminal storage facilities for grain are filled almost to capacity. Wheat supplies are very burdensome, but it is expected that a very large fraction of this year's crop will be placed in storage under the Government loan.

On August 1, cold storage holdings of beef, lamb, cheese, and eggs were larger than a year ago, but stocks of pork, lard, and butter were lower. Stocks of lard were especially low.

G. L. JORDAN

WHAT WILL FARMERS BE WILLING TO PAY FOR SOYBEAN MEAL IN 1942-43?

Because of the extremely large anticipated production of oil seed meals compared to previous years and to the limited amount of available processing capacity, the Government, processors, and farm leaders are

recognizing the urgent need for programs that will result in (1) continuous operation of processing plants; (2) prevention of accumulation of abnormally large supplies of meal at the processing plants; and (3) the use of this meal for livestock feed, if possible; otherwise, as fertilizer. In order to assure continuous operations by processors, it is necessary that an outlet be found both for the oil and the meal. In spite of the fact that present quotations for soybean oil are below the ceiling price of 11 $\frac{3}{4}$ cents a pound, Government representatives do not appear to be as much concerned about the disposal of the oil as they are of the meal.

One of the first questions that arises concerns the price that farmers could be expected to pay for the quantity of meal that will be produced. Would they pay enough for the meal so that the value of the meal and oil would equal the guaranteed price to farmers, \$1.60 to \$1.67, and pay processing, transportation, and handling costs? If not, some special program may be necessary to assure maximum utilization of processing equipment and an even flow of meal to the farms of the nation in spite of usual seasonal variations in quantities fed and meal prices.

If it is found necessary for the Commodity Credit Corporation or other Government agencies to take an active part in such a program, either by outright purchase of the meal or soybeans, it would be necessary to have some reasonable basis for contracts with processors, and a reasonable pricing system for meal sold to farmers. This study deals with the subject of the probable price that farmers would be willing to pay for the meal under conditions that are now anticipated. There are two ways of making such an estimate. One is to correlate prices formerly paid for meal with supply and demand factors that affected the price of the meal. If prices of soybean meal in bags at Chicago are used as one factor, the supply of feed grains per animal unit in the United States is used for a second factor, and the income of industrial workers is used for a third factor, we get a correlation of .979 for the years 1934-35 to 1940-41, with a standard error of \$1.23 a ton. On the basis of these factors, the estimated price for meal for 1942-43 at Chicago is about \$42.00 a ton. The bulk price at Decatur would be about \$6.50 lower or about \$35.50 a ton.

However, there is another approach to the problem which is quite as realistic and more likely to be right under circumstances where the prices of competing feedstuffs are affected by Government programs, either price-supporting programs such as the loan, or price-stabilizing programs such as the Government sale of wheat for feed at 85 percent of corn parity. I refer to the consideration of the relationship between livestock prices, corn prices, and soybean meal prices. The farmer determines

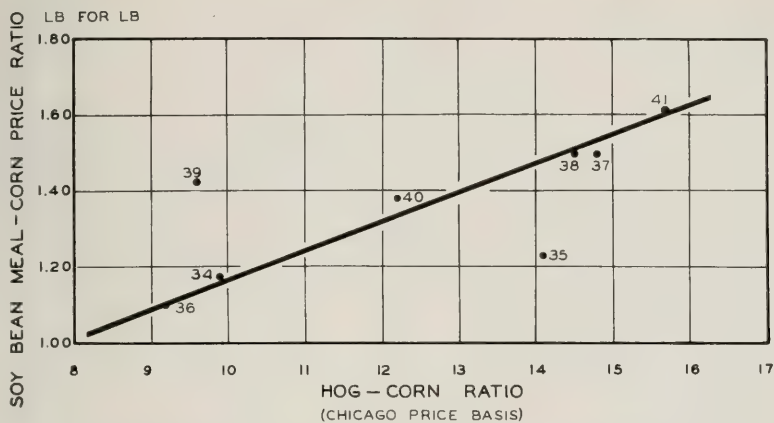


FIG. 1.—THE RELATIONSHIP BETWEEN PRICES FARMERS PAID FOR SOYBEAN MEAL IN RELATION TO CORN AND THE CHICAGO HOG-CORN RATIO, U. S. 1934-35 TO 1941-42, INCLUSIVE

what price he can pay for protein concentrates on the basis of the price he gets for his livestock products and the price he has to pay for corn. If corn is especially cheap relative to protein concentrates, as it is in the western Corn Belt, the hog farmer may feed very little concentrate. On the other hand, when the prices of livestock and livestock products are high relative to the cost of protein concentrates and the cost of corn, farmers have paid higher prices for concentrates in relation to corn than when the opposite has been true.

This is illustrated in Figure 1 which indicates that, pound for pound, farmers paid very little more for soybean meal than for corn when the hog-corn ratio was low, but paid considerably higher prices for meal in relation to corn when the hog-corn ratio was high. The correlation between the soybean-meal corn-price ratio and the hog-corn ratio is quite high, except for 1935-36 and 1939-40. The relatively high meal price in 1939-40 might be accounted for by a very strong export demand. The explanation of the relatively low price in 1935-36 is not so easy.

If, for example, we assume that the hog-corn ratio would be 15.7 for 1942-43 as is estimated for 1941-42, the equivalent of a soybean meal-corn price ratio of 1.60, and that the United States farm price of corn would be 85 cents (85 percent of parity if the parity price of corn were \$1), the wholesale price of soybean meal in bags at Chicago would be approximately \$48.60. This is obtained by using the following formula:

$$\text{U. S. farm price of corn} \times 2,000 \times (\text{estimated soybean meal-corn price ratio})$$

Substituting in the above formula using the above estimates, we would have:

$$\frac{\$.85 \times 2,000 \times 1.60}{56} = \$48.60.$$

In order to determine what the bulk price would be at Decatur, we would have to deduct about \$3.20 a ton for freight and about \$3.25 a ton for bags. That would bring the Decatur price of bulk meal down to about \$42, with this unusually favorable hog-corn ratio.

Comparable soybean values. Assuming a processing cost of 22 cents a bushel and the price of oil at 11¾ cents a pound, soybeans delivered at Decatur should be worth about as follows with different prices of meal, assuming a yield of 49 pounds of meal and 9 pounds of oil per bushel:

<i>Meal price</i> (12 months' average)	<i>Bean price</i> (12 months' average)
\$45	\$1.96
40	1.82
35	1.69
30	1.57

Seasonal variation in soybean meal prices. Farmers will not pay the same price for meal during every month of the year. They will pay more during December, January, and February than during any other months and the least during June, July, and August (Fig. 2). The index of seasonal variation of soybean meal prices for the period 1934-35 to 1940-41, inclusive, is as follows:

October.... 99.4	January....105.3	April..... 99.2	July..... 97.1
November... 99.7	February...103.8	May..... 98.4	August..... 97.2
December...102.6	March.....100.3	June..... 95.6	September...101.4

Any merchandising program for the disposal of soybean meal would have to take into consideration these seasonal variations in the price the farmers are willing to pay for meal.

Possible procedures. Are we in a position to estimate the price that farmers will be willing to pay for soybean meal in 1942-43? A troublesome factor is the very large anticipated production of all protein concentrates this year which means that feeders unaccustomed to using soybean meal would have to be induced to use it. We have had other years of relatively high production of protein concentrates and the relationships shown in Figure 1 include such years. In fact, if there has been any significant correlation between soybean meal-corn price relationships and meal-corn supply relationships it has been offset by the influence of other factors. Another question that remains unanswerable concerns the

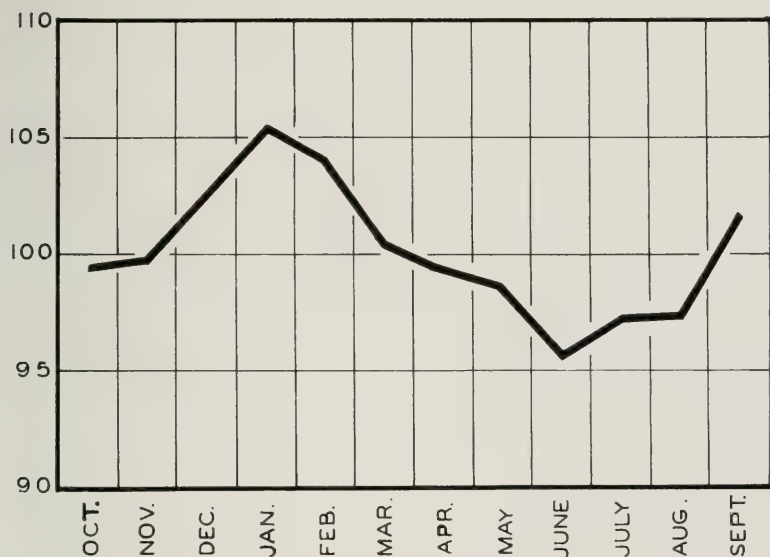


FIG. 2.—SEASONAL INDEX OF SOYBEAN MEAL PRICES, CHICAGO, 1934-35 TO 1940-41

1942-43 hog-corn ratio. If pork ceilings are retained at present levels, the hog-corn ratio is likely to decline below the 1941-42 level because the price of corn is expected to rise. A reasonable estimate for the United States farm price of corn would seem to be about 85 cents a bushel. If the hog-corn ratio declines to 14, Chicago basis, 85-cent corn would suggest a price of about \$38 at Decatur for bulk meal. Such a price would justify more than the minimum price of \$1.60 a bushel for soybeans to the farmer located near processors. If the hog-corn ratio dropped to 13 for the year, the Decatur bulk price would be estimated at \$36 a ton, or about \$33.50 if the Chicago hog-corn ratio dropped to 12. At this price, excessive transportation costs for beans or meal from and to points a long distance from processing plants might have to be subsidized. For the week ending August 29, 1942, the Chicago hog-corn ratio was 17.1. Either corn at 80 cents at the farm and a Chicago hog-corn ratio of about 14 or corn at 85 cents and a hog-corn ratio of about 13 would seem to be a conservative estimate. Either would suggest a Decatur bulk price for meal of about \$35.50 to \$36.

If Government agencies disposed of the meal, it would seem reasonable, in the light of present circumstances, to base the Government selling price for meal upon some reasonable relationship to the price of corn or the feed grains used in the particular area under consideration. That would assure the greatest gross income from the sale of the meal and

would not penalize feeders located long distances from the mills. The mills could not be expected to follow such a procedure, but it would be just as reasonable for Government agencies to do so as to sell wheat for feed on that basis. Soybean meal would have to be sold to western hog and beef-cattle producers on about the same basis in relation to corn or other feed grains as would be used in Illinois. Otherwise, these western livestock producers could not be induced to use large quantities of soybean meal. Inasmuch as many livestock men have not been accustomed to using soybean meal, an educational program should supplement an equitable selling plan.

Under circumstances such as we face this winter, that is, when production of soybeans exceeds processing capacity, competition among sellers of beans without the necessity of much competition for the beans by the processors is likely to force the price of soybeans down to the Government support price. This would be likely even though the value of the meal and oil would justify a higher price for the beans. Processing margins would tend to be high under these circumstances. This might be one argument for Government agencies to buy the beans from the farmer, contract for the processing, sell the meal and oil, and return to the producer \$1.60 a bushel, or the amount received for the meal and oil after paying processing costs, whichever were higher. Another alternative would be to establish ceiling prices on soybean meal.

G. L. JORDAN

WHERE ILLINOIS FARMERS BUY LIVESTOCK

In the June issue of *Illinois Farm Economics*, there was presented an analysis of livestock selling based on reports by 3,227 Illinois farmers and stockmen. Here we have an analysis of the channels thru which livestock was purchased, based on the same 3,227 reports.

Terminal public markets were the principal channels used in the purchase of feeder cattle and feeder lambs, 34.4 and 40.3 percent, respectively.

Purchases from other farmers afforded the major sources for purchase of feeder pigs (62.0 percent), of breeding cattle (62.1 percent), of breeding hogs (72.2 percent), of breeding sheep (48.7 percent), and the second most important source of feeder sheep and lambs.

Livestock dealers were the second most important sources for purchase of feeder cattle (28.4 percent), of dairy and breeding cattle (17.0 percent), of feeder pigs (14.0 percent), and of breeding swine (13.4 percent). They were important sources for purchase of feeder lambs (16.4 percent), and of breeding sheep (11.4 percent).

PERCENTAGES OF DIFFERENT KINDS OF LIVESTOCK BOUGHT THRU DIFFERENT CHANNELS BY ILLINOIS FARMERS IN 1940

	Terminal public markets	Coopera- tive agencies distrib- uting direct	Concen- tration yards or local markets	Dealers or truckers	Auc- tions or sale barns	Farmers or others	Total
Cattle and calves							
Stocker and feeder.....	34.4	5.3	6.2	28.4	11.1	14.6	100.0
Dairy and breeding.....	6.5	.1	1.0	17.0	13.3	62.1	100.0
Total.....	31.8	4.8	5.7	27.3	11.3	19.1	100.0
Hogs and pigs							
Feeder.....	6.7	.4	5.1	14.0	11.8	62.0	100.0
Breeding.....	4.3	.6	.9	13.4	8.6	72.2	100.0
Total.....	6.5	.4	4.8	13.9	11.6	62.8	100.0
Sheep and lambs							
Feeder.....	40.3	4.1	15.3	16.4	3.6	20.3	100.0
Breeding.....	10.7	3.1	11.5	11.4	14.6	48.7	100.0
Total.....	37.7	4.0	15.0	16.0	4.5	22.8	100.0

From auctions or sales barns, farmers reported purchasing 11.1 percent of their feeder cattle, 13.3 percent of breeding cattle, 11.8 percent of feeder pigs, 3.6 percent of feeder lambs, and 14.6 percent of breeding sheep.

Purchases thru concentration yards or local markets were reported as 6.2 percent of the feeder cattle, 5.1 percent of feeder pigs, 15.3 percent of feeder lambs, and 11.5 percent of breeding sheep.

Cooperative agencies supplying feeders direct were the source for purchase of 5.3 percent of the feeder cattle and of 4.1 percent of the feeder lambs.

The complete data appear in the table below.

The reports listed total purchases, 1940, of 28,405 feeder cattle and calves, 2,962 dairy and breeding cattle, 19,451 feeder pigs, 1,467 breeding swine, 13,573 feeder sheep and lambs, and 1,278 breeding sheep.

An important question in the purchase of both feeder cattle and of feeder lambs is whether Illinois farmers are conducting their buying in a manner that tends to strengthen or to weaken their bargaining power in this important field of livestock operations.

R. C. ASHBY

EDUCATION FOR OUT-OF-SCHOOL RURAL YOUTH

Do rural young people who are now out of school get much further education other than the training that comes from experience? To what extent do they drop out of school before finishing high school or college? Do they wish to continue their education? If they had the chance for

further education, what would they wish? These are questions that a recent Randolph County rural youth study, carried on by the Agricultural Experiment Station in cooperation with the U. S. Department of Agriculture, Division of Farm Population and Rural Welfare, and the county farm adviser and AAA committeemen in the county, sought to answer in January 1941. The study included: (1) years of school; (2) extent of vocational education; and (3) additional training desired. The data were secured from 1,040 farm and nonfarm rural youth, aged 18 to 30 years.

Extended schooling. The first question naturally asked is, when do these rural youth drop out of school? In Randolph County, almost two-thirds of the young men and over one-half of the young women quit school after finishing the eighth grade. One in five of the young men and one in four of the young women finished high school, but only one in twelve of the young women and less than 2 percent of the young men went on to college.

Why do such a large number of rural youth drop out of school after finishing the eighth grade? There may be several reasons: Young men feel that they need to get started in farming. Both young men and young women may feel that high schools offer them little training in the field in which they are interested. The parents of these rural youth may need them at home. They may feel that they cannot afford to go on to school, or they may feel that they cannot keep up in dress, manner, or studies with those in high school. Farm young women, especially, may be led to feel that an eighth grade education is enough for them.

Doubtless, many of those who went on to high school wished to do something other than farming. This was especially true of the young women. Most of the rural youth who went on to college went for a period of only two years and were preparing to become teachers or to get a business college training.

Vocational training. Opportunities in vocational training are limited in Randolph County to vocational agriculture in the high schools of Chester and Sparta and home economics in Sparta, Chester, and Red Bud. Of a total of 615 rural young men questioned, only one in twelve had taken any vocational training. One in 25 had studied vocational agriculture, and one in 50 had taken a business course. More than nine out of ten young men in the county depended upon experience and training other than in school to fit them for the vocation of farming.

One out of six of 427 rural young women had some form of vocational training. About half of them took a business course; less than one in 20 took home economics. Of those going to high school, one in three had some business, home economics, or teacher training. The

majority of the girls who went on the farms had no public school vocational training.

Additional training desired. More than half of the out-of-school rural young men in Randolph County wanted additional vocational training. Over one-fourth wanted additional training in semi-skilled vocations such as woodworking, factory work, shoemaking, milling, blacksmithing, or pipecutting; one-sixth, in agriculture; and one in 20, in the professions including physicians, ministers, lawyers, teachers, etc. Only one-third of the out-of-school rural young women wanted additional training; half of these wanted it in home economics; about one in 20 wanted clerical training; and about one in 20 wanted professional training, especially teaching and nursing.

Though half of the out-of-school rural young men in Randolph County expressed a desire for additional vocational training, only one in 12 was getting it. If a program of training work develops, it doubtless should include both agriculture and the semi-skilled trades. About half of the young women wanting additional vocational training seem to be getting it. Additional training opportunities should include training in home economics and training for clerical and professional work.

Expansion in classes and other opportunities for additional training for out-of-school rural youth evidently should come in the fields relating to agriculture, home economics, semi-skilled trades, clerical occupations, and the professions. Those making the efforts to expand the program should recognize the need for coordination of extension work, vocational agriculture, home economics, and other efforts in order to offer out-of-school training for rural youth so that the program can be developed on a unified basis in the county. This is especially desirable in view of the war needs and the movement of a large number of rural youth into the Army and into war industries. It will be equally valuable when the war is over and the rural youth begin to come back into the county to find jobs. A unified guidance and training program should, and can, be developed for rural youth in Illinois. It will require the coordinated effort of all of those who are now working in the field of training of youth for rural life.

D. E. LINDSTROM

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Works. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period.....	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929.....	95	105	104	99	103	103	104	110	110	110
1930.....	86	88	89	94	83	87	93	100	89	91
1931.....	73	65	62	80	58	58	72	84	68	75
1932.....	65	48	41	69	43	43	62	66	47	58
1933.....	66	51	45	71	49	51	72	62	50	69
1934.....	75	65	61	80	57	55	69	72	64	75
1935.....	80	79	82	81	64	65	80	78	74	87
1936.....	81	81	86	80	74	82	103	89	86	103
1937.....	86	86	96	84	80	87	103	98	102	113
1938.....	79	69	69	80	72	81	101	92	78	89
1939.....	77	65	65	78	72	81	97	99	92	108
1940.....	78	68	69	79	78	90	113	106	105	123
1941.....	87	82	87	85	101	116	136	129	149	155
1941 July.....	89	86	91	84	98	103	123	131	153	160
Aug.....	90	87	92	86	102	111	129	135	158	160
Sept.....	92	91	99	88	110	123	140	134	163	161
Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	135	165	166
Dec.....	94	95	99	92	134	162	176	139	170	167
1942 Jan.....	96	100	104	94	132	146	155	143	174	171
Feb.....	97	101	106	95	127	134	141	147	178	172
Mar.....	98	103	108	97	127	154	159	146	183	171
Apr.....	99	104	111	98	136	143	146	150	187	173
May.....	99	104	112	99	130	144	145	155	192	174
June.....	99	104	110	99	130 ¹¹	...	...	159	194	176
July.....	99 ¹¹	105	111 ¹¹	99	...	...	...	...	...	180 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			July 1941	Current months		
	1924-29	1940	1941		May	June	July
Corn, bu.	\$.81	\$.56	\$.63	\$.69	\$.78	\$.79	\$.81
Oats, bu.	.42	.32	.36	.32	.52	.45	.42
Wheat, bu.	1.30	.81	.93	.94	1.10	1.06	1.06
Barley, bu.	.66	.46	.55	.50	.78	.74	.65
Soybeans, bu.	1.94	.82	1.24	1.34	1.68	1.58	1.60
Hogs, cwt.	9.97	5.54	9.37	10.70	13.40	13.60	14.00
Best cattle, cwt.	8.57	8.84	10.07	9.60	11.90	11.60	11.80
Lambs, cwt.	12.22	8.52	9.85	10.20	12.20	13.10	12.90
Milk cows, head	78.00	65.00	80.00	84.00	100.00	98.00	99.00
Veal calves, cwt.	11.27	9.63	11.19	10.80	13.40	13.40	13.30
Sheep, cwt.	6.52	3.44	4.43	3.90	6.10	6.00	5.20
Butterfat, lb.	2.42	.27	.33	.35	.37	.36	.36
Milk, cwt.	2.42	1.67	2.05	2.00	2.20	2.10	2.20
Eggs, doz.	.42	.17	.22	.23	.26	.26	.28
Chickens, lb.	.20	.13	.15	.17	.19	.19	.19
Wool, lb.	.46	.37	.37	.40	.43	.40	.39
Apples, bu.	1.59	1.14	1.07	.80	2.10	1.75	1.40
Hay, ton	13.88	6.68	8.49	7.10	12.60	10.60	9.00
Potatoes, bu.	1.39	.83	.82	.90	1.60	1.75	1.55

¹²For sources of data in tables see previous issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

cheese for the next twelve months. We shall have the feed necessary for increased production of livestock but labor efficiency will have to be increased to offset the smaller number of men available for employment. Family labor will have to be used more intensively and all sorts of labor saving devices adopted. Because of the need for men in the armed forces and the necessity of supplying our armed forces and allies with arms and equipment, eventually we shall probably have to do as other belligerents have already done, that is, get along with less food. This will mean more rationing particularly of meats and animal products, but it may be the surest way to win the war.

Debts. Farmers are paying off their farm mortgage debts at an unprecedented rate. The debt on farm land has been reduced from eleven to six and three-fourths billion dollars since the depression of 1930-33. That is a healthy sign and indicates that those farmers will be in a fairly strong position after the war. Farmers are not yet making the mistake that they made in 1919, that is, assuming that present farm income rates will last forever. City people are also paying off their debts. The chief danger is that, after the war, we may all expand our borrowings and cause a boom from which there might be a later collapse.

Prices. Not much change is expected in prices if anticipated price controls become operative. Livestock prices probably will remain near their ceilings and prices that are far below ceilings may rise further. The live-stock-feed ratios probably will become somewhat less favorable to the live-stock feeder but the bumper crop of corn assures a plentiful feed supply for the months ahead.

G. L. JORDAN

WHY FARM TENANTS MOVE

The question, "Why do farm tenants move?", has been asked with more than usual frequency during the past ten years. In addition to the frequent shifting of families from one farm to another, the large amount of farm foreclosure during the depression in the early part of the 30's called attention to the unusually large numbers of changes occurring within a community. The ill effects of frequent changes in a community, from the standpoint of the economic well-being of the family that is moving, as well as the social effect upon the community, has long been recognized. However, many statements not based upon facts have been made concerning this situation.

In order to get the reaction of those who make the moves, the Department of Agricultural Economics made a study of the situation in the northern two-thirds of Illinois. Seventy-one townships in 61 counties

were selected and an attempt was made to contact every farmer who had moved on or about March 1, 1941, in those townships. Information was secured from 536 tenants, some of whom had moved from farms to which others of the 536 tenants had moved. Since there were 4,975 tenants in the 71 townships, this number indicates that about one tenant in ten had moved that year. Out of 536 cases, 387, or 72 percent, were tenants who had moved to a farm within the area. This represented 4.1 percent of all farms in the same townships. The remaining 149 cases represented tenants who had moved out of the township or quit farming. In this connection, it is significant that 138 of the 387 tenants were occupying their first farms, that is, they were beginning farmers. This is of special interest because much has been said about securing an opportunity for the young man to begin farming. It is quite clear that whenever a young man does begin farming someone else must quit. Of course, in these particular cases, the beginners had not forced someone else off the farm in every instance.

Voluntary retirement, death, and other causes are responsible for many farm vacancies each year. In addition, however, to the 138 beginning farmers, 129 of the 387 tenants said that they had moved of their own accord, which accounts for approximately half of all the moves among old tenants. A total of 175 tenants were forced to give possession of the farm but had secured another. Thirty-eight were forced to move and failed to secure another farm or were not interested in renting the ones which they could secure. Thirty who were forced to move did not try to secure another farm, and 26 additional ones quit merely because they were ready to retire. A net of 11 tenants were forced to quit farming because their farms were consolidated so that they could be operated by the owner with the help of a hired man or by some other arrangement which disposed of a farm tract as a tenant farm. In other words, out of 536 instances of moving, 11 farmsteads were displaced within the year's time.

Further analysis of this data shows that of the 129 tenants who moved of their own accord, 57 percent did so in an attempt to secure a farm which more nearly met their needs, 17.5 percent retired, and 9.5 percent moved because they were dissatisfied with their landlords.

Of the 175 individuals who were forced to move and who located new farms, the average distance moved was 11.5 miles, which indicates that when tenants move they usually leave the old community where they have lived. This required that the family establish itself in a new environment, which, of course, carries certain social and economic disadvantages.

Seventy-eight of the 135 tenants who were forced to move did so because the farm had been sold, in part due to settling estates and in part due to resale of properties by creditors who attained ownership by deed

or foreclosure. The latter is a problem of special concern. During the last 10 years the large amount of farm foreclosure has definitely caused more than the usual amount of shift among tenants. The remedy of this situation lies not in tenancy itself, but in control of the price situation as a means of avoiding farm foreclosure or other debt difficulties.

Another fact which may well receive considerable attention is that in 26.6 percent of the cases the farm had to be vacated for the use of the owner or that of relatives. This situation represents a large number of the new farmers beginning their farming careers. In all, more than half of all moves were made because the tenant felt that he was bettering his condition by moving, or he was asked to move in order to make way for the owner or for a relative of the owner to begin farming. From the general standpoint of agriculture, both of those reasons are economically desirable and justifiable. They point toward greater economic opportunity or greater stability, either because the farm will be occupied by an owner or because it will be occupied by the relative of an owner.

The sale of the farm resulting, in part, from the landlord's indebtedness, and accounting for 19.5 percent of the moves, is the next most important problem related directly to the question of economic stability.

So much emphasis has been placed upon the unsatisfactory relations between the landlord and tenant that it is significant that only 12 percent of all moves were caused by unsatisfactory relationships between the two parties. In four percent of all moves, the tenants were dissatisfied with their landlord and wanted to move, while in eight percent of the cases the landlords asked the tenants to move.

One of the main criticisms of tenancy is its instability. To quite an extent, this problem is related to the period of time over which the tenant has received notification that he must vacate the farm. Of the 244 instances where tenants were forced to give up the farm because of its sale or for other reasons, 216 tenants gave definite answers concerning the date on which they received notice. In 21.3 percent of the cases, the tenants had received less than three months' notice, 12 percent had received from four to five months' notice, and 16.2 percent six months' notice, but 50.3 percent had received from seven to 12 months' notice that they would have to give up the farm the following March. In general, we have heard more about those tenants who had short-term notice than the much larger percentage to whom notice was given six months or longer in advance. This is a point, however, which may well be given careful consideration in order to avoid unnecessary distress among farm tenants.

The instability of tenants is further emphasized when one notes that only 40.2 percent of them moving onto new farms had located a farm six months in advance of the date they had to move, and even eight

percent of those who were on new farms did not know until March 1 or later that they could definitely secure it. These percentages point out that after a man knows he must quit a farm, it requires some time for him to locate a new farm for the coming year.

Many landlords are apt to criticize tenants because they do not plan their farming operations as well as they should or far enough in advance. A large part of the explanation of this fault rests on the fact that landlords frequently notify their tenants that they can have the farm for the new year so late in the season that it discourages the tenant from carrying the amount of livestock they might otherwise carry or from giving attention to details about the farm which they would gladly give if they were sure that they could occupy it another year. One of the best means, therefore, of improving landlord-tenant relations is to insure a longer period of notice that the tenant may continue to occupy the farm for the coming year. In 84 percent of the cases of voluntary moves, the tenants knew before January 1 that they were going to move to a new farm the following year. However, of the tenants who moved involuntarily, only 58 percent knew before January 1 that they had a farm for the succeeding year.

Some of the most significant points brought out in this study are, therefore, that vacating the farm so that a new tenant may become established as a farmer, or voluntary moves by tenants to improve their situations, are responsible for a big majority of the tenant moves in the northern two-thirds of Illinois. During recent years, many of the changes in farm ownership are responsible for a large number of the moves among tenants. This is due primarily to the large amount of farm foreclosure which has taken place and to the settlement of estates. More stable economic conditions would have avoided much of the distress brought about through tenant moves in recent years.

The best means of helping to bring about better landlord-tenant relations is that of planning further in advance so that the tenant may know for a longer period of time whether he may have the farm for the succeeding year. Interviews with a large number of tenants and owners convinces one that many tenants are willing to do much more toward maintaining the property if they are sure that they will occupy it during the coming year, or at least will be reimbursed for the improvements they put on the property, if they are required to move from the property and do not obtain the benefit of the improvements. Educationally, we need to stress this particular point. After making this study, one is convinced that in the northern two-thirds of Illinois, the actual distress brought about by frequent moves of tenants is not as great as one might be led

to expect from remarks made by many individuals. Instances may be pointed out where a lack of understanding between landlord and tenant is responsible for unsatisfactory relationships and is the cause of much unrest among tenants. However they are a minority of the large number of moves which are made by tenants.

H. C. M. CASE and S. I. WARREN

HOW FARMERS IN McHENRY COUNTY, ILLINOIS¹ SPENT THEIR 1940 AND 1941 INCOMES

Shifts in the type of expenditures made by farmers when incomes increase materially are the basis of the following article. The differences between total cash expenditures and total cash income are due either to changes in cash on hand or in the bank, or to errors made in gathering the data. In Table 1 are shown total cash income, total cash expenditures, and

TABLE 1.—TOTAL CASH INCOMES AND EXPENDITURES OF CERTAIN McHENRY COUNTY FARMS, 1940 AND 1941: GROUPED BY TENURE

	Owners	Part owners	Cash tenants	Livestock-share tenants	All farms
Number of farms, 1940.....	45	14	40	23	122
Total cash income per farm.....	\$3 957	\$5 141	\$4 211	\$2 859	\$3 969
Total cash expenditures per farm.....	3 965	4 913	4 134	3 101	3 966
Difference.....	\$ -8	\$ 228	\$ 77	\$ -242	\$ 3
Percent difference is of total income.....	-.2	4.4	1.8	-8.5	.1
Number of farms, 1941.....	51	15	50	30	146
Total cash income per farm.....	\$5 579	\$6 850	\$6 352	\$3 824	\$5 614
Total cash expenditures per farm.....	5 340	6 508	5 875	3 611	5 288
Income less expense.....	\$ 239	\$ 342	\$ 477	\$ 213	\$ 326
Percent difference is of total income.....	4.3	5.0	7.5	5.6	5.8

the difference, as well as the percentages that the difference is of the total cash income, for the various tenure groups and for all farms in a study made in McHenry County, Illinois, for 1940 and 1941.²

In 1940, the total cash income exceeded the total cash expenditures by \$3 per farm or .1 percent of the cash income; this percentage varied among tenure groups, however, from a minus 8.5 percent for 23 livestock-share-lease tenants to a plus 4.4 percent for 14 part-owner operators. In 1941, the total cash income exceeded the expenditures of all tenure groups by \$326 or 5.8 percent, and with little variation among the groups. Total

¹This is based on data gathered in a farm credit survey of McHenry County for 1940 and 1941. Farms used in this survey were selected as representative of all farms in the county.

²All data used in this analysis include only the farm operator's share of the business.

income for all farms in the study averaged over 40 percent higher in 1941 than in 1940.

In this analysis, expenditures for different purposes are expressed as a percentage of the total expenditures. The total expenditures for each group show the difference in amount.¹

Expenditure by Tenure Groups (Table 2)

Owners and part owners. Total expenditures averaged materially higher for part owners than for owners each year, but the increase in 1941 over that of 1940 was about the same for both groups. The ratio of expenditures made for the purchase of capital items (dairy cows, other livestock, machinery and equipment, automobiles, etc.) varied but little between the two groups in either year. Part owners bought more dairy cows and spent relatively more for farm improvements and relatively less for automobiles in 1941 than in 1940.

The proportion of total expenditures used for other operating expenses averaged materially lower in 1941 than in the previous year, but payments on debt principal averaged materially higher. Cash cost of family living (not including automobile operating expense) averaged between 18 and 20 percent of the total expenses for both groups.

Tenants. Total expenditures averaged materially higher for cash tenants than for livestock-share-lease tenants each year; expenditures of cash tenants in 1941 exceeded those of 1940 by \$1,714, over three times as much as the \$510 which the 1941 expenditures of the livestock-share-lease tenants exceeded those of the previous year.

The proportion of expenditures for capital items excluding land purchases averaged about the same for both tenant groups in both years. Cash tenants used 12.2 percent of their total expenditures for purchases of land in 1941 compared with none in 1940. They spent 7.3 percent for purchases of machinery and equipment in 1941, compared with 11.2 percent the year before. Livestock-share-lease tenants spent proportionately less for purchases of all livestock in 1941 than in 1940, but proportionately more for purchases of automobiles.

Other operating expenditures were relatively lower for both tenant groups in 1941 than in 1940, especially for the cash tenants. Payment on debt principal averaged relatively higher in 1941 than in the previous year for both groups, but especially for cash tenants. Cash family living costs represented a relatively lower percentage of income in both years for cash tenants than for livestock-share-lease tenants, reflecting differences in their total income level.

¹See footnote 2, page 370.

TABLE 2.—AVERAGE PERCENT OF FARM OPERATORS' TOTAL CASH EXPENDITURES BY USE, McHENRY COUNTY, ILLINOIS, 1940 AND 1941: GROUPED BY TENURE

Item	1940			1941		
	Owners	Part owners ^a	Total	Owners	Part owners ^a	Total
Number of farms.....	45	14	59	51	15	66
Number of dairy cows purchased	1.6	1.9	1.7	2.5	4.3	2.9
Percent of expenses for:						
Dairy cow purchases.....	3.7	3.7	3.7	5.4	6.8	5.8
Other livestock.....	2.7	4.4	3.2	2.7	1.4	2.4
Land.....	0	0	0	0	0	0
Improvements.....	1.9	.6	1.6	2.1	4.4	2.7
Machinery and equipment.....	9.7	7.2	9.0	8.8	7.9	8.6
Auto.....	4.4	7.0	5.2	4.2	3.6	4.1
Feed.....	7.3	6.8	7.1	6.7	5.7	6.4
Fertilizer.....	1.5	1.5	1.5	1.0	1.1	1.0
Other operating expenses ^b	33.4	32.6	33.1	28.2	24.5	27.2
Interest.....	5.6	6.6	5.9	4.5	5.9	4.9
Family living.....	17.8	18.7	18.0	18.1	20.2	18.6
Debt principal.....	12.0	10.9	11.7	18.3	18.5	18.3
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Total expenditures.....	\$3 965	\$4 913	\$4 189	\$5 340	\$6 508	\$5 604

Item	1940			1941		
	Cash tenants ^a	Livestock-share tenants ^a	Total	Cash tenants ^a	Livestock-share tenants ^a	Total
Number of farms.....	40	23	63	50	30	80
Number of dairy cows purchased	3.5	1.9	2.9	4.0	1.6	3.1
Percent of expenses for:						
Dairy cow purchases.....	7.8	5.6	7.1	7.7	4.5	6.8
Other livestock.....	2.6	3.7	2.9	2.3	1.7	2.1
Land.....	0	0	0	12.2	0	8.9
Improvements.....	0	0	0	.4	0	.3
Machinery and equipment.....	11.2	11.1	11.2	7.3	11.1	8.3
Auto.....	3.4	1.9	2.9	3.4	7.2	4.4
Feed.....	7.1	6.7	7.0	6.4	5.7	6.3
Fertilizer.....	.9	.7	.8	.7	.7	.7
Other operating expenses ^b	40.4	33.1	38.3	30.1	28.8	29.7
Interest.....	1.2	2.0	1.5	1.1	1.3	1.2
Family living.....	17.1	22.8	18.8	14.9	23.8	17.3
Debt principal.....	8.3	12.4	9.5	13.5	15.2	14.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Total expenditures.....	\$5 134	\$3 101	\$3 756	\$5 875	\$3 611	\$5 026

^aOnly the farm operators' share of the business is included.^bExpenses for seed, custom work, labor, repairs on machinery and equipment, rent, taxes, auto expense, etc.

Expenditures by Farmers With Different Debt Ratios (Table 3)

Total expenditures averaged significantly higher for high-debt than low-debt owners and part owners for both years, but the reverse was true for tenants. All low-debt groups averaged a higher percent of expenditures for capital items and operating expenses than the high-debt groups for both years. The percent of total expenditures used for family living

TABLE 3.—AVERAGE PERCENT OF FARM OPERATORS' TOTAL CASH EXPENDITURES BY USE, MCHENRY COUNTY, ILLINOIS, 1940 AND 1941: GROUPED BY TOTAL DEBT TO PROPERTY RATIO^a

	Owners and part owners ^b				Tenants ^b			
	1940		1941		1940		1941	
	Under 20 percent	20% and over	Under 20 percent	20% and over	Under 20 percent	20% and over	Under 20 percent	20% and over
Number of farms	23	36	22	44	31	32	41	39
Number of dairy cows purchased	1.8	1.6	2.2	3.3	2.4	3.4	2.5	3.8
Percent of total expenses for:								
Land and improvements	2.4	1.1	1.2	3.2	0	0	17.1	.1
Other capital items ^c	27.7	17.7	23.1	20.5	25.6	21.6	21.7	21.4
Operating expenses ^d	45.9	40.0	45.2	31.5	50.3	41.1	37.2	36.5
Interest .....	.8	8.2	1.4	5.8	.5	2.6	.5	2.0
Family living	19.6	17.3	25.1	16.7	18.6	19.4	16.7	17.9
Debt principal	3.6	15.7	4.0	22.3	5.0	15.3	6.8	22.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total expenses	\$3 534	\$4 610	\$4 011	\$6 402	\$4 167	\$3 358	\$5 299	\$4 737

^aThe ratio of total debts to total assets.

^bOnly operators' share of the farm business.

^cDairy cows, other livestock, machinery and equipment, and automobile.

^dFeed, fertilizer, seed, custom work, labor hired, repairs on machinery and equipment, rent, taxes, auto expense, etc.

did not vary materially for any group from 1940 to 1941 except for the low-debt owners and part owners. Payment on debt principal averaged higher in 1941 than 1940 for all groups.

Expenditures With Different Sizes of Farms

Total expenditures averaged significantly higher on large than on small size farms for both tenure groups in 1940 and 1941. Small size owners and part owners were the only group that did not increase its percent of total expenditures for capital items in 1941 over 1940. The percent to operating expenses averaged considerably lower in 1941 than 1940 for all groups. Small size owners and part owners were the only group having a higher percent for family living in 1941 than in 1940. Payment on debt principal averaged higher in 1941 than 1940 for all groups.

Summary

1. Total farm income averaged over 40 percent higher in 1941 than in 1940.

2. Recorded farm and living expenditures averaged 99.9 percent of the total farm income in 1940 and 94.2 percent in 1941.

3. Farm operators, irrespective of tenure status, used a larger pro-

portion of their total expenditures for farm capital items in 1941 than in 1940, especially for tenants.

4. Farm operators, irrespective of tenure status, used a larger proportion of their total expenditures for payments on debt principal in 1941 than in 1940.

5. Low debt-ratio cash tenants with large farms used a significant percentage of their total expenditures for land purchases in 1941.

6. Low debt-ratio owners and part owners with small farms used a higher percentage of their total expenditures for family living in 1941 than in 1940.

7. In 1940 and 1941, owners and part owners of small farms and in 1941 tenants on small farms spent a higher percentage of their total expenses on debt principal than did the operators of large farms in the same tenure groups during these years.

B. D. PARRISH

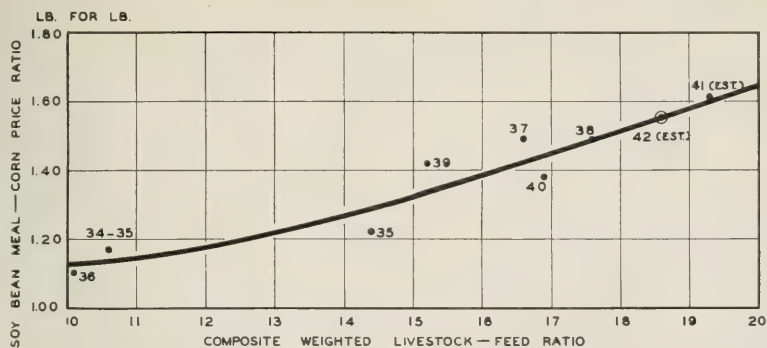
SOYBEAN MEAL PRICES

(Supplement to August Article)

Figure 1, page 357 of the August issue of *Illinois Farm Economics*, illustrated the relationship that existed between the prices farmers paid for soybean meal in relation to corn and the Chicago hog-corn ratio for the years 1934-35 to 1941-42, inclusive, if the years 1935-36 and 1939-40 were omitted. Inasmuch as soybean meal is fed to beef cattle and milk cows as well as hogs, a composite livestock-feed ratio could be expected to be more satisfactory than just the hog-corn ratio alone. In fact, one reason that 1935-36 was so far out of line on the hog-corn chart was because the hog-corn ratio was abnormally high in relation to the beef cattle-corn ratio and the butterfat-feed ratio. The opposite was true in 1939-40. However, for 1942-43, the hog-corn ratio is expected to be more important because of the great increase in hog numbers and the necessity to feed much of the increased meal supplies to hogs.

A composite livestock-feed ratio was calculated, and the resulting relationship is illustrated below. For an interpretation of the chart, see the explanation below it. This composite index is computed as follows: In order to give hogs, beef cattle, and butterfat equal weights, their actual ratios to corn (or feed) are multiplied by the following factors: hogs $\times 1.33$; beef cattle $\times 1.00$; butterfat $\times .50$. This adjusts the actual ratios so that their 20-year averages are numerically approximately equal.

We know that the demand for feed depends to a considerable extent upon the number of animals to be fed. Each of the above adjusted ratios was multiplied each year by the fraction that the number of animals of that class on farms January 1 of the year under study was of the average



THE RELATIONSHIP BETWEEN PRICES FARMERS PAID FOR SOYBEAN MEAL IN RELATION TO CORN AND A COMPOSITE WEIGHTED LIVESTOCK-FEED RATIO,
U. S., 1934-35 TO 1941-42, INCLUSIVE

In its simplest terms, the above chart shows us that as prices of livestock and livestock products increased in relation to the cost of feed, that is, as feeding became more profitable, farmers paid more for soybean meal in relation to the price of corn. The profitableness of feeding is represented by the livestock-feed ratio on the horizontal scale and the price paid for soybean meal in relation to corn, pound for pound, is recorded on the vertical scale. According to the estimated livestock-feed ratio of about 18.6 for 1942-43, farmers would be expected to pay about as much for 1 pound of soybean meal in bags at Chicago as for 1.56 pounds of shelled corn at the farm for the crop year as a whole. This relationship is suggested as a means of estimating the price of soybean meal for any given or assumed price of corn.

number for the 8 years covered. The total of the three adjusted ratios each year was then divided by three to get the composite weighted livestock-feed ratio for that year. The formula would be:

$$\left[\begin{aligned} &(\text{Hog-corn ratio} \times 1\frac{1}{3} \times (\% \text{ number of hogs January 1 of current} \\ &\quad \text{year was of 8-year average} \div 100)) \\ &+ (\text{beef cattle-corn ratio} \times (\% \text{ number of cattle} \\ &\quad \text{other than milk cows on farms January 1 was} \\ &\quad \text{of 8-year average} \div 100)) \\ &+ (\text{butterfat-feed ratio} \div 2 \times (\% \text{ number of milk} \\ &\quad \text{cows on farms January 1 was of 8-year average} \div 100)) \end{aligned} \right] \div 3.$$

It will be noted that the fit is much better than for the hog-corn ratio alone as illustrated in the August article. Although the 1942-43 estimate is largely a guess, it suggests approximately the same price for meal that was suggested in the August article using hog-corn ratio only for 1942-43. This similarity is accidental and is due to the dominance of the hog-corn ratio caused by the greater anticipated increase in numbers of hogs than of beef cattle or milk cows.

G. L. JORDAN

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE. Cooperative Agricultural Extension
Work. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁹	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁶	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period . . .	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929 . . .	95	105	104	99	103	103	104	110	110	110
1930 . . .	86	88	89	94	83	87	93	100	89	91
1931 . . .	73	65	62	80	58	58	72	84	68	75
1932 . . .	65	48	41	69	43	43	62	66	47	58
1933 . . .	66	51	45	71	49	51	72	62	50	69
1934 . . .	75	65	61	80	57	55	69	72	64	75
1935 . . .	80	79	82	81	64	65	80	78	74	87
1936 . . .	81	81	86	80	74	82	103	89	86	103
1937 . . .	86	86	96	84	80	87	103	98	102	113
1938 . . .	79	69	69	80	72	81	101	92	78	89
1939 . . .	77	65	65	78	72	81	97	99	92	108
1940 . . .	78	68	69	79	78	90	113	106	105	123
1941 . . .	87	82	87	85	101	116	136	129	149	155
1941 Aug.	90	87	92	86	102	111	129	135	158	160
Sept.	92	91	99	88	110	123	140	134	163	161
Oct.	92	90	93	90	112	161	179	134	167	163
Nov.	92	91	93	91	112	142	156	135	165	166
Dec.	94	95	99	92	134	162	176	139	170	167
1942 Jan.	96	100	104	94	132	146	155	143	174	171
Feb.	97	101	106	95	127	134	141	147	178	172
Mar.	98	103	108	97	127	154	159	146	183	171
Apr.	99	104	111	98	136	143	146	150	187	173
May	99	104	112	99	130	144	145	155	192	174
June	99	104	110	99	131	...	...	159	194	176
July	99	105	111	99	132 ¹¹	...	...	...	209 ¹¹	180
Aug.	99 ¹¹	106	115 ¹¹	99	...	...	...	...	...	183 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			August 1941	Current months		
	1924-29	1940	1941		June	July	August
Corn, bu.....	\$.81	\$.56	\$.63	\$.69	\$.79	\$.81	\$.81
Oats, bu.....	.42	.32	.36	.32	.45	.42	.42
Wheat, bu.....	1.30	.81	.93	.97	1.06	1.06	1.06
Barley, bu.....	.66	.46	.55	.52	.74	.65	.70
Soybeans, bu.....	1.94	.82	1.24	1.33	1.58	1.60	1.57
Hogs, cwt.....	9.97	5.54	9.37	10.80	13.60	14.00	14.50
Red cattle, cwt.....	8.57	8.84	10.07	10.20	11.60	11.80	12.50
Lambs, cwt.....	12.22	8.52	9.85	9.90	13.10	12.90	13.10
Milk cows, head.....	78.00	65.00	80.00	82.00	98.00	99.00	100.00
Veal calves, cwt.....	11.27	9.63	11.19	11.10	13.30	13.30	13.90
Sheep, cwt.....	6.52	3.44	4.43	4.30	6.00	5.20	5.20
Butterfat, lb.....	.42	.27	.33	.34	.36	.36	.39
Milk, cwt.....	2.32	1.67	2.05	2.05	2.10	2.20	2.30
Eggs, doz.....	.30	.17	.22	.23	.26	.28	.29
Chickens, lb.....	.21	.13	.15	.16	.19	.19	.20
Wool, lb.....	.46	.30	.37	.37	.40	.39	.40
Apples, bu.....	1.59	1.14	1.07	.75	1.75	1.40	1.35
Hay, ton.....	13.88	6.68	8.49	7.70	10.60	9.00	9.30
Potatoes, bu.....	1.39	.83	.82	.80	1.75	1.55	1.15

^{1, 2} For sources of data in tables see July issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

October, 1942

Number 89

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THE CURRENT SITUATION AND OUTLOOK

The agricultural situation can be represented fairly well by three characteristics: (1) stabilization of prices of farm products at near present levels; (2) emphasis upon increased production of meat, dairy products, and eggs; and (3) increasing farm labor shortages.

Not all prices are stabilized, even though there are price ceilings on practically all farm products at the wholesale or retail level. Fresh fruits and vegetables are important exceptions. Ceiling prices on some products are designated as maximum prices for given periods, but adjustments will be made for seasonal variation. In other cases, price ceilings to consumers may be retained at present levels, but prices to farmers may be permitted to rise as costs rise. The Government would pay the increase to the farmer in the form of a subsidy. Subsidies on milk are now granted in one large milkshed in order to reimburse the farmer for added labor and other costs of production. The practice probably will be adopted on a wide scale in the case of milk in order to maintain a high level of milk production. Recently it has been relatively more profitable to feed corn to hogs than to milk cows. That fact, when coupled with a heavy drawing off of farm labor by industry and the armed forces, has caused such a trend toward liquidation of dairy herds that something has to be done if the present high level of milk production is to be maintained. Higher prices at retail would offer the same inducement to producers as do subsidies, but increases in retail prices raise the cost of living and all wage

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

scales tied to the cost of living. It is much cheaper for the nation to pay the subsidy.

The Secretary of Agriculture has issued a call for a 10-percent increase in 1943 spring pig production over the 1942 record crop, asking for about 68 million head as compared with 62 million in 1942. This would result in a 1943 slaughter of approximately 13.4 billion pounds dressed weight of pork compared with more than 11 billion pounds in 1942. Secretary Wickard estimated that the 1943 requirements for U. S. military forces and lend-lease will exceed 1942 requirements by more than 1 billion pounds. An attempt has also been made to get farmers to increase the production of chickens for meat this winter.

Meat rationing is expected soon. The greatest shortages appear to be in pork, beef, and canned fish.

In spite of this very strong demand for meat, marketings of hogs are likely to be so heavy during December and January that some markets may be glutted, at least for short periods of time, because of the physical impossibility of handling all the hogs that farmers might wish to market. If so, it may be necessary to establish a system of shipping permits. Farmers are urged to market some of their hogs before the rush or to feed them to heavier weights for February or later shipment. Such a program would be facilitated if some assurance were given farmers that heavy hogs would not be heavily discounted if marketed late in the season.

The farm labor problem has become more serious from month to month. The new labor freeze order and possible deferment of "necessary" labor on livestock, dairy, and poultry farms should help prevent a much more critical situation. At this writing, the granting of furloughs for soldiers in order to permit them to work on farms does not seem to be favored, particularly by the Army. At least married men with children are likely to be deferred for some time if no restrictions are placed upon the use of the 18- and 19-year-old group.

G. L. JORDAN

RELATION OF SIZE OF FARM TO ORGANIZATION, EXPENSES, AND EARNINGS

How large a farm should a farmer operate? This is a question which has always perplexed the farmer and many others associated with agriculture. It is not expected that there should be one answer to this question which will hold true under all conditions; however, an analysis of farm financial records indicates the optimum size for a given set of conditions. This article is an attempt to show some of the differences in expenses and earnings associated with size of farm among farms which are differently organized.

Labor and machinery costs. An analysis of 17,911 Illinois farm records kept during the period, 1926-1935, shows that about two-thirds of all farm expense was labor and machinery expense.¹ These two cost items were of about the same relative importance in the different farming-type areas, but they were not of the same importance on farms of different sizes. Thirteen acres were farmed for each \$100 labor cost and 45 acres for each \$100 machinery cost on farms of less than 140 acres in Farming-Type Area 4, the East-Central Illinois Cash-Grain Area, while 25 and 60 acres were farmed with the same expenditures for labor and machinery on farms of over 300 acres (Fig. 1).

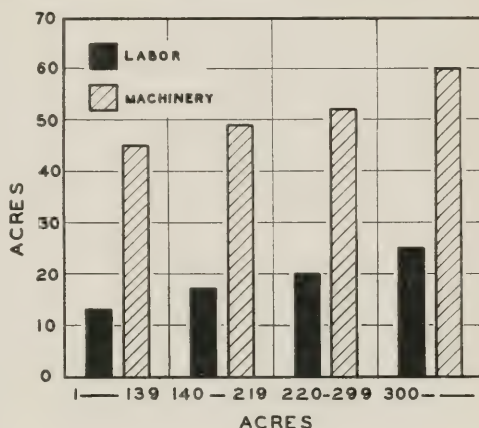


FIG. 1. NUMBER OF ACRES FARMED FOR EACH \$100 LABOR AND FOR EACH \$100 MACHINERY EXPENSE, FARMING-TYPE AREA 4, 1926-1935

There are several things which contribute to this wide range in labor and machinery costs. Small farms have relatively more livestock. Large farms may use improved and labor-saving machinery which is not economical on small farms because of the high overhead cost. Miscellaneous jobs and chores may be done more effectively as the size of farm increases, as it does not require twice as much time to care for four horses and ten cows as for two horses and five cows.

In addition to having lower costs, large farms which are well-equipped with machines are in a better position to maintain or increase production during a war period than are farms which must rely largely on man labor. Operators of small farms may find that cooperative ownership of machinery or doing custom work is a profitable method of distributing overhead costs over a large acreage.

Return on capital invested. Illinois farmers are interested in receiving a high return on their capital because of the large investment on most farms. In Fig. 2 are shown the rates earned on investment on farms of different sizes for Area 1, the Chicago Dairy Area; Area 4, the Cash-Grain Area; and Area 6, the St. Louis Dairy Area. The peak of rate earned on investment is reached on farms of smaller size in the

¹Labor expense includes hired labor and the value of operator's and unpaid family's labor.

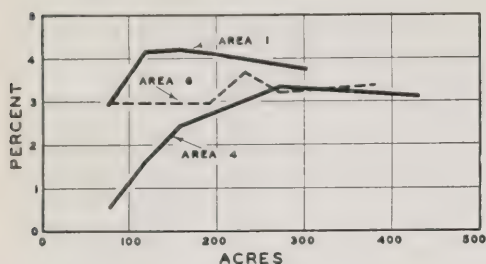


FIG. 2. RATE EARNED ON INVESTMENT BY SIZE GROUP, AREAS 1, 4, AND 6, 1926-1935

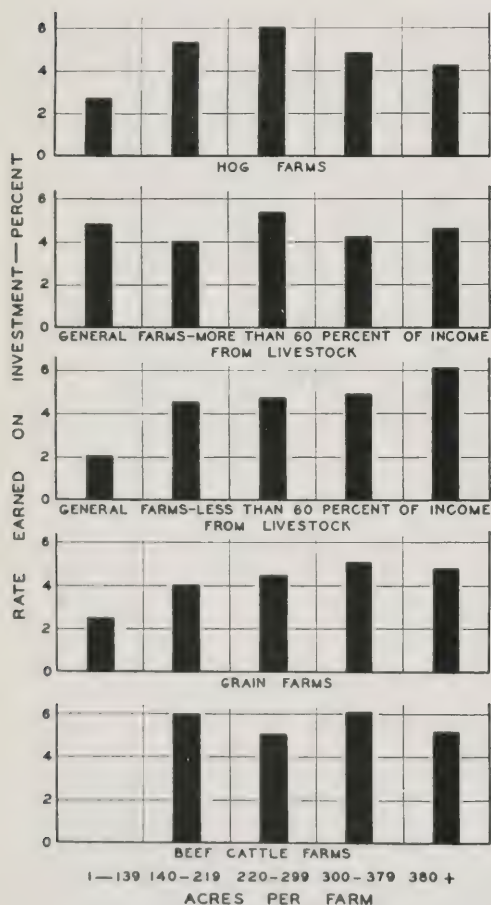


FIG. 3. RATE EARNED ON INVESTMENT BY SOURCE OF INCOME AND SIZE GROUPS, AREAS 3, 4, AND 5, 1930-1939

areas where dairying is the predominant type of farming than in Area 4 where grain farming predominates.

The above observation led to a more detailed analysis of 3,720 farm records in Areas 3, 4, and 5, which had been kept by 372 identical farmers for the 10-year period, 1930-1939. Area 3 is the Western Livestock and Grain Area, and Area 5 is the West-Central General Farming Area. These records were sorted into five groups according to major source of income. The rate earned on investment on the hog farms increased as the farms increased in size up to 260 acres after which it declined, but the return on the grain farms increased as the farms increased in size to an average of 340 acres (Fig. 3). The rate earned on the general farms with the least livestock increased throughout the size range, and the return on the cattle and more intensive general farms was erratic. It can readily be seen that the combination of the productive factors which results in the highest rate earned on investment occurs on a smaller acreage on livestock than on grain farms.

Level of living. The farm operator is interested not only in getting a good return for his capital but also in providing his family with a high level of living. If the owner-operators on accounting farms of less than

140 acres and on farms of between 300 and 379 acres in Areas 3, 4, and 5 for 1930-1939 had half of their capital borrowed at 5 percent, the families on the smaller farms would have had \$902 from the farm for living expenses and savings, whereas, the families on the larger farms would have had \$2,029 a year for the 10-year period, as indicated by the following data:

	<i>Less than 140- acre farms</i>	<i>300 to 379- acre farms</i>
Investment.....	\$20 696	\$56 023
Receipts.....	2 487	6 508
Expenses.....	1 068	3 078
Receipts less expenses.....	1 419	3 430
5 percent on half of investment.....	517	1 401
Amount available for living, debt payments, and savings.....	902	2 029

With the same proportion of capital borrowed and about the same intensity of operation, a large farm will furnish a higher level of living than will a small farm; however, it is quite possible for a small farm, which is heavily stocked with efficient livestock, to furnish a higher level of living than a grain farm on a larger acreage.

W. N. THOMPSON and P. E. JOHNSTON

RECENT DEVELOPMENTS IN INFLATION CONTROL

On October 2, Congress passed an amendment to the Emergency Price Control Act of 1942. This amendment was designed to remedy defects in the original price control act (approved January 30, 1942). It authorized and directed the President to "... issue a general order stabilizing prices, wages, and salaries, affecting the cost of living. . . . " On the following day, the President issued the executive order which established an Office of Economic Stabilization and set forth the general policy to be followed by that office and other federal departments and agencies concerned.

The effect of the executive order and subsequent interpretations has been to freeze wage rates at October 3 levels and allow for no increase except on approval of the National War Labor Board. For most agricultural products which did not previously have price ceilings, the Office of Price Administration invoked temporary, 60-day ceilings at the highest price of the week of September 28 to October 2.

The greatest failure of inflation control up to October 3 was the failure to check the rise of wage rates. While agricultural product prices have risen much more than have wage rates since the beginning of the current war, they have risen much less than during the corresponding period of World War I. Furthermore, there has been but little rise since

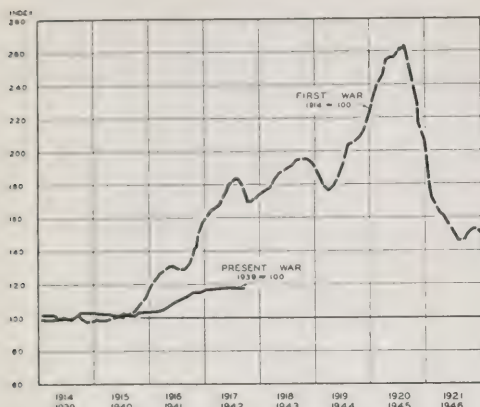


FIG. 1. WHOLESALE PRICES OF ALL COMMODITIES OTHER THAN FARM PRODUCTS AND FOODS, IN FIRST WORLD WAR AND PRESENT WAR

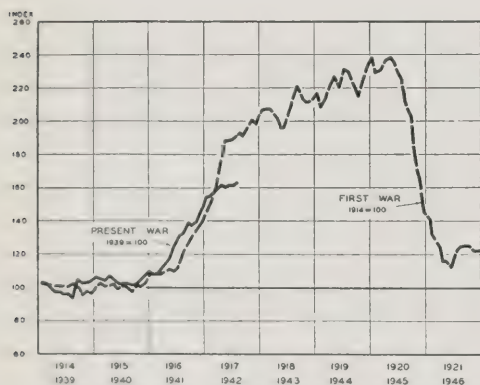


FIG. 2. WHOLESALE PRICES OF FARM PRODUCTS IN FIRST WORLD WAR AND PRESENT WAR

last spring, when the first serious attempt was made by the Office of Price Administration to provide for an over-all system of commodity price control. Wage rates, on the other hand, have risen fully as rapidly during this war as they did during the previous one and continued to rise during the past six months.

The passage of the amendment to the Emergency Price Control Act and the executive order which followed it does not necessarily mean that there will be no further rise in the general level of commodity prices or in wage rates. Rather, the new law and the executive order represent a marked improvement in inflation control. If they are followed up consistently, there will be but little further increase in wholesale prices or in the cost of living—unless, indeed, increased taxes and the cost of buying war bonds are to be looked at as a part of the “cost of living.”

In spite of the many difficulties which have been encountered, the federal government's efforts at price control have already been fairly successful.

Although prices have risen, they have risen much less than in the corresponding period of World War I.

Wholesale prices of all commodities other than farm products and foods are shown in Fig. 1. The broken line indicates their course during the period 1914 to 1921, the solid line, their course during the period 1939 to date. It will be noted that for these industrial products, wholesale prices are now less than 20 percent above the base-period average, whereas they had risen 80 percent by the middle of 1917.

Figure 2 shows graphically the course of wholesale prices of farm products for the two war periods. From the beginning of 1940 through

March, 1942, prices of farm products, unlike those of industrial products, followed a course almost parallel to that of the first world war. By March, 1942, they were nearly 60 percent higher than the 1939 average. There has been relatively little rise since that time.

Figure 3 shows the course of hourly wage rates during the two war periods. The wage rate index used is that of the Federal Reserve Bank of New York, converted to the bases 1914 = 100 and 1939 = 100 for the two war periods. During the first world war, hourly wage rates rose much less rapidly than did prices of industrial products. Thus for 1917, the average was only 23 percent above the 1914 level, whereas wholesale prices of all commodities other than farm products and foods rose 72 percent. In July, 1942, on the other hand, wage rates averaged 24 percent above the 1939 level, whereas wholesale prices of industrial products were 18 percent above their level in 1939.

Whether the past failure to restrict increases in wage rates may be said to be the result of a policy or of the lack of a policy of wage-rate control is perhaps open to question. It is clear, however, that prior to October 3, the OPA did not have any direct control over wage rates and that the rise of wage rates threatened to make it impossible to maintain many of the existing commodity price ceilings. Furthermore, the National War Labor Board appeared to take little account of the effect of its wage policies on prices.

Although OPA did not have the authority to control wage rates, it had an indirect influence upon them. When manufacturers or other employers have ceiling prices placed on their products, they are restricted in what they can "bid" for labor. They cannot raise wages to keep old or attract new workers and then make up the difference by raising prices, if price increases are denied them by OPA.

However, the OPA does not have price ceilings on finished combat items such as airplanes, ships, tanks, and munitions. Manufacturers of these were free to bid up wage rates without restraint from commodity price ceilings. Furthermore, decisions of the National War Labor Board may force employers to increase wage rates even against their will, and if

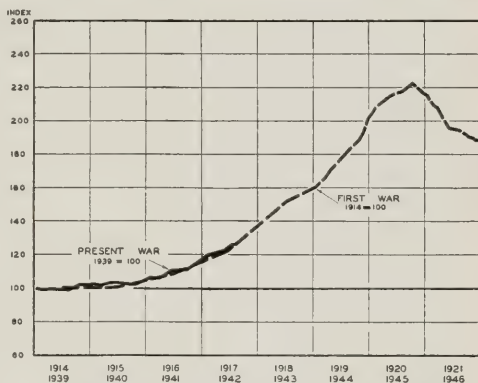


FIG. 3. WAGE RATES IN FIRST WORLD WAR AND PRESENT WAR

such wage increases result in serious hardships to employers, the OPA could scarcely refuse to allow to increase prices. With more than half our current industrial output being for war purposes, it is obvious that the indirect effect of OPA price ceilings could not prevent inflationary wage rate increases.

Under the new executive order, it is provided that "when the NWLB or the Price Administrator have reason to believe that a proposed wage increase will require a change in price ceiling, such proposed increase if approved by the NWLB, shall become effective only if approved by the Director of the Office of Economic Stabilization." In effect, then, the OPA has finally been given some direct authority in wage rate decisions, and when there is a disagreement between the NWLB and OPA, the Director of the OES is to act as the referee.

E. J. WORKING

CANADA'S WARTIME POLICIES FOR CURBING INFLATION

Canada's principal wartime policies for curbing inflation can be listed as follows:

1. Establishing a ceiling on all kinds of retail prices and paying subsidies when necessary to get needed production.
2. Establishing a ceiling on wages and salaries—wages being subject to cost of living adjustments.
3. Effecting substantial increases in taxes.
4. Effecting compulsory savings to be refunded after the war.

A comparison of changes in wholesale prices and cost of living in World War I with changes during a corresponding period in World War II indicates that up to the present these policies have been helpful in curbing inflation (Fig. 1). By 1917, wholesale prices of all in Canada were 74 percent above those for 1914, the opening year of World War I. In contrast, by the middle of 1942, wholesale prices were only 27 percent above those for 1939, the opening year of World War II.

From 1914 to 1917, living costs in Canada increased 31 percent compared with a 15 percent increase from 1939 to the middle of 1942. Unlike the rapid upward movements in wholesale prices and living costs which occurred during the third year of World War I, in the past few months the movements of wholesale prices and living costs have been only slightly upward.

Price Ceilings and Subsidies

To help curb inflation and to be fair to all groups, the Canadian government fixed retail price ceilings on all types of commodities. In

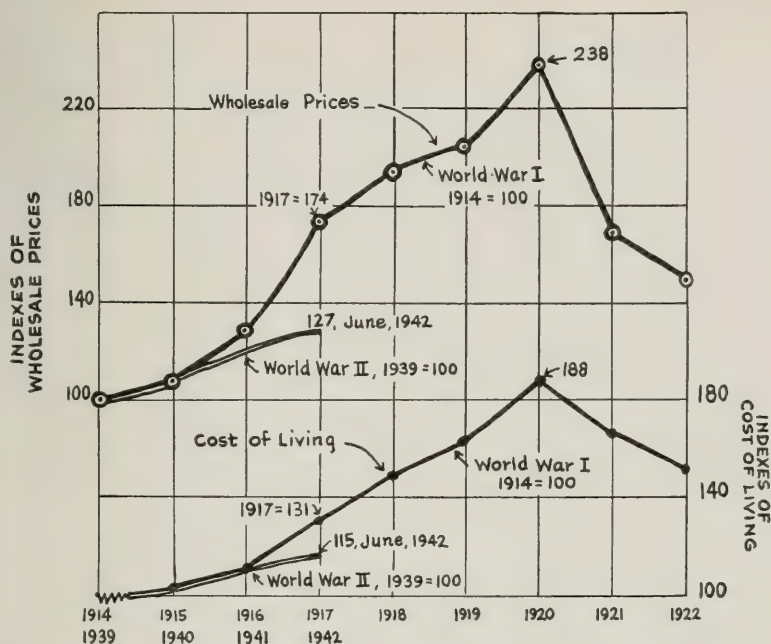


FIG. 1. CHANGES IN WHOLESALE PRICES AND COST OF LIVING IN CANADA, 1914 TO 1922, AND 1939 TO JUNE, 1942

Data from *The Economic Analyst*, Dept. of Agr., Ottawa, Sept., 1942

some cases it has been necessary to give subsidies in order to get produced the volume of a particular commodity needed. For example, it was found that the ceiling prices on dairy products were too low to get the volume of milk production necessary for domestic consumption and for lend-lease shipments. Hence, in July 1942, the Government announced that a subsidy of 6 cents a pound would be paid on all butterfat manufactured in the country.

Under our system of competitive economics, one would naturally ask: Why not raise the price to consumers enough to get the volume of production needed? From the viewpoint of the Canadian economy, the answer is that a subsidy costs *less* than a price increase would cost. Since wages in Canada are geared to changes in cost of living, an increased price of butterfat to farmers would not only increase the retail price of butter but would also increase wages. Canadian economists have figured that the 6-cent subsidy to farmers on butterfat will cost the Government about \$15,000,000 a year as compared with \$20,000,000 to \$25,000,000 a year if competition were permitted to work its course.

In considering the possibility of using subsidies in the United States to encourage increased production, one objection raised is that once established it is very difficult, if not impossible, to eliminate the subsidy after its need has passed. One answer to this objection for food products would be to tie the use of subsidy directly to lend-lease funds, and after the war, as purchases of foods for lend-lease shipments are discontinued, to discontinue the subsidy in the same proportion.

Ceiling on Wages and Salaries

Since the United States is likely to adopt some policy limiting increases in wages and salaries, the Canadian method which has been in operation on a nation-wide scale since November 15, 1941, is of particular interest. The principal points included in the Canadian system are as follows:

1. Beginning November 15, 1941, the basic scale of wages¹ in effect can be increased only with the permission of the National or Regional Labor Board.

2. If general increases in the basic wage rates or in salaries have not been given since August 1939, the employer is at liberty to adjust his cost of living bonus to the full 14.6 point rise (October 114.6) since August 1939.

3. All employees receiving wages of \$25 a week or more, and all male employees regardless of earnings, are to receive a cost of living bonus of 25 cents a week for each point increase in the cost of living index. For female employees earning less than \$25 a week, the cost of living bonus would be 1 percent of the wage for each point increase. In making these increases, it is understood that deductions corresponding with increases would be made for each point decrease in cost of living index down to 114.6, the cost of living index as of October 1941.

This method of adjusting wages to changes in cost of living has already been used by many firms in the United States.²

Taxes and Enforced Savings

Under proposals now being considered in Congress, income taxes in the United States are likely to be very substantially increased in the near future. Such increases, if made, will bring them more nearly in line with taxes and compulsory savings now in effect in Canada and Great Britain.

¹Exceptions to this provision include Government employees, those engaged in agriculture, horticulture, fishing, and trapping; hospitals or religious, charitable, or educational institutions; nonprofit associations; those employing domestic servants in a private home, and employment of a casual nature other than for the purpose of the employer's trade.

²*Illinois Farm Economics*, August 1941, pp. 97-105.

In Canada, the tax bill consists of: (1) a normal tax; (2) a graduated tax; and (3) compulsory savings. Taxes range from about 10 percent of the income for a single person earning \$750 a year to 91 percent of the income of a single person earning \$500,000 a year. To show how the Canadian system works, let us examine the taxes of a married man with one dependent, earning \$3,000 a year. His tax bill would be \$680.40, or 23 percent of his total income. Of this, the post-war refund or compulsory savings would be \$308, or about 10 percent of his income. The remaining \$372.40 would be for taxes.

The budget, however, permits deductions from the tax payable covering payments into superannuation funds, life insurance premiums, and payments on mortgage principal, providing the insurance policies were in effect on the budget day, June 23, 1942. Using the example shown above, if the total of insurance premiums and payments on mortgage principal were \$308 or over, this man could deduct \$308 from his tax bill of \$680.40 leaving a net tax payable to the Government of \$372.40.

Can Canada Continue to Curb Inflation?

The principal forces which might upset the Canadian policy for curbing inflation are: (1) pressure of higher prices from farm groups; (2) pressure of higher wages from labor groups; and (3) failure of United States to curb inflation.

If the United States enacts a well-rounded program to curb inflation, it is probable that the Canadian program now in effect will effectively prevent any great increase in prices or living costs. On the other hand, pressure for higher farm prices and higher wages in Canada is likely to become increasingly strong if farm prices and industrial wages in the United States continue to rise.

R. W. BARTLETT

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period....	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929.....	95	105	104	99	103	103	104	110	110	110
1930.....	86	88	89	94	83	87	93	100	89	91
1931.....	73	65	62	80	58	58	72	84	68	75
1932.....	65	48	41	69	43	43	62	66	47	58
1933.....	66	51	45	71	49	51	72	62	50	69
1934.....	75	65	61	80	57	55	69	72	64	75
1935.....	80	79	82	81	64	65	80	78	74	87
1936.....	81	81	86	80	74	82	103	89	86	103
1937.....	86	86	96	84	80	87	103	98	102	113
1938.....	79	69	69	80	72	81	101	92	78	89
1939.....	77	65	65	78	72	81	97	99	92	108
1940.....	78	68	69	79	78	90	113	106	105	123
1941.....	87	82	87	85	101	116	136	129	149	155
1941 Sept.....	92	91	99	88	110	123	140	134	163	161
Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	135	165	166
Dec.....	94	95	99	92	134	162	176	139	170	167
1942 Jan.....	96	100	104	94	132	146	155	143	174	171
Feb.....	97	101	106	95	127	134	141	147	178	172
Mar.....	98	103	108	97	127	154	159	146	183	171
Apr.....	99	104	111	98	136	143	146	150	188	173
May.....	99	104	112	99	130	144	145	155	193	174
June.....	99	104	110	99	131	149	151	159	198	176
July.....	99	105	111	99	132	125	126	157	204	180
Aug.....	99	106	115	99	143	...	...	161	215 ¹¹	183
Sept.....	100 ¹¹	108 ¹¹	114 ¹¹	99 ¹¹	146 ¹¹	...	...	...	...	185 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			October 1941	Current months		
	1924-29	1940	1941		August	September	October
Corn, bu.....	\$.81	\$.56	\$.63	\$.61	\$.81	\$.80	\$.73
Oats, bu.....	.42	.32	.36	.39	.42	.45	.44
Wheat, bu.....	1.30	.81	.93	1.01	1.06	1.15	1.15
Barley, bu.....	1.66	.46	.55	.65	.70	.73	.75
Soybeans, bu.....	1.94	.82	1.24	1.45	1.57	1.59	1.59
Hogs, cwt.....	9.97	5.54	9.37	10.30	14.50	13.90	14.40
Beef cattle, cwt.....	8.57	8.84	10.07	10.40	12.50	12.40	12.50
Lambs, cwt.....	12.22	8.52	9.85	9.80	13.10	12.20	12.60
Milk cows, head.....	78.00	65.00	80.00	86.00	100.00	105.00	105.00
Veal calves, cwt.....	11.27	9.63	11.19	12.10	13.90	14.10	14.00
Sheep, cwt.....	6.52	3.44	4.43	4.50	5.20	5.50	4.90
Butterfat, lb.....	.42	.27	.33	.37	.39	.41	.45
Milk, cwt.....	2.32	1.67	2.05	2.40	2.30	2.40	2.55
Eggs, doz.....	.30	.17	.22	.27	.29	.30	.32
Poultry, lb.....	.21	.13	.15	.15	.20	.20	.19
Wool, lb.....	.36	.30	.37	.38	.40	.41	.41
Apples, bu.....	1.59	1.14	1.07	.90	1.35	1.30	1.30
Hay, ton.....	13.88	6.68	8.49	9.20	9.30	10.00	10.80
Potatoes, bu.....	1.49	.83	.82	.80	1.15	1.15	1.20

¹²For sources of data in tables see previous page.

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College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

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THE CURRENT SITUATION AND OUTLOOK

The most important developments during the past month have been the election and the favorable turn of the war. The impact of both will be gradual but significant. The most obvious current development is the necessity for more and more rationing of foods as the result of a greatly increased demand for lend-lease, to supply our armed forces, and for domestic consumption. In spite of a record output of farm products in 1942, including both crops and livestock products, we are reducing our consumption of meats and will doubtless be allowed limited rations of meat, cheese, butter, whole milk in some cities, and probably other animal products. We are now eating not to exceed 2½ pounds of meat, exclusive of poultry, liver, kidneys, sweetbreads, etc. No cream testing above 19 percent butterfat may be sold. Coffee and sugar are rationed. Shortages of canned fruits and vegetables and dried fruit are in prospect. In 1943, only 81 percent of the meat and 82 percent of all dairy products produced are expected to be made available to domestic consumers. Only 35 percent of the cotton textiles and 18 percent of woolen goods will be available to domestic consumers. But in spite of all this evidence of shortages, we shall have enough to eat and wear; in fact, we shall doubtless continue to be the best fed large nation on the globe.

Price ceilings will be used to prevent the relatively short supply available for domestic consumption and the strong demand from being reflected in materially higher prices for farm products. It is possible, however, that farmers will receive higher prices for some products in

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

order to induce increased production—of dairy products, for example—or to quiet some outspoken criticism of past Governmental policies, such as the inclusion of benefit payments and omission of labor costs in determining parity prices for commodity loan purposes.

The favorable turn of the war suggests caution in expansion of breeding herds and purchases of farmland. It now appears that this country will be generous in providing food and other necessities to devastated countries after the war, but any increase in demand for that purpose is likely to be short lived. The domestic demand for farm products may continue at a high level for a year or two after the war while consumers are renewing stocks of automobiles, radios, washing machines, refrigerators, houses, house furnishings, etc., but it will take excellent coordination of Governmental efforts and private business activity to prevent a substantial increase in unemployment soon after the war ends.

G. L. JORDAN

CATTLE-FEEDING EXPERIENCES ON FARM BUREAU FARM MANAGEMENT SERVICE FARMS

During the years 1938 to 1941, cattle feeding proved to be a profitable enterprise on the farms enrolled in the Farm Bureau Farm Management Service.¹ During these four years the average value of 100 pounds live weight of cattle equalled that of 17.4 bushels of corn on the Chicago markets, while during the preceding 15 years the average value was equal to only 13.0 bushels of corn, as shown by records of the U. S. Department of Agriculture. In this study the relative profitableness of the different droves and classes of cattle was measured by their returns per \$100 worth of feed fed. The term, "returns" means the difference between the cost of the cattle when delivered to the farm and the net returns received from their sale after delivery costs and selling commissions have been deducted. It was considered necessary to receive returns of about \$125 per \$100 worth of feed in order to pay for the feed, labor, equipment, and other expenses involved in feeding cattle during the period.

The value of the grain fed was calculated by applying the monthly Illinois farm price to the amount of grain fed during that month. Purchased supplements were charged at cost on each farm; hay and silage, at the prices set on each farm; and pasture, at 5 cents per pasture day per animal unit (an animal unit in the case of feeder cattle is approxi-

¹Complete records of each drove of cattle fed during the 1940-41 feeding period and averages by classes of cattle for all three feeding periods are given in the "Third Annual Report of Feeder Cattle Fed During the Years 1940 and 1941 by Cooperators in the Farm Bureau Farm Management Service." See Agricultural Experiment Station Mimeograph, AE-1877.

mately 1,000 pounds of live weight). The approximate prices of feed during the three periods were as follows:

TABLE 1.—AVERAGE PRICES OF FARM-GROWN FEEDS AND
PURCHASED SUPPLEMENTS FED TO CATTLE

Kind of feed	1938-39	1939-40	1940-41
Corn per bushel.....	\$.42	\$.53	\$.61
Oats per bushel.....	.26	.32	.34
Purchased supplements per 100 lb.....	1.65	1.75	1.78
Corn silage per ton ^a	4.50	4.50	4.40
Hay per ton (mostly legume).....	7.00	7.00	7.40
Pasture per pasture day.....	.05	.05	.05

^aPrices charged for corn silage during 1939-40 and 1940-41 were lower than the price of corn justified. The prices for those years should have been about \$5.25 and \$5.75 respectively, per ton.

All averages used for the various items in this article gave equal weight to each drove of cattle, regardless of the number of animals fed in each one, and to records of each year, regardless of the number of droves fed during that time. Most droves consisted of from 20 to 50 head of cattle and there were usually from 6 to 20 droves of cattle in each class each year.

Relative profitableness of different classes of cattle. The best average returns above feed cost for the three feeding periods (\$166 per \$100 worth of feed fed) were obtained by those farmers who fed good-to-choice heavy steers purchased during the fall or early winter and sold during the late winter or spring. This class of cattle brought the best returns of any during the 1938-39 and the 1940-41 feeding periods and were surpassed during the 1939-40 period only by long-fed, good-to-choice steer calves and good-to-choice yearling steers.

Good returns were obtained most consistently from good-to-choice steer calves and from good-to-choice yearling steers. During each of the three feeding periods, both classes brought in average returns of \$134 or more per \$100 worth of feed fed and three-year average returns of \$145 and \$137, respectively.

The three-year average returns paid by yearling heifers, \$151 per \$100 worth of feed fed, were better than those brought in by any other class of cattle except short-fed, good-to-choice heavy steers. However, the returns of only \$115 per \$100 worth of feed fed, paid in by this class of cattle during the 1939-40 feeding period, were lower for that year than those for any other class except short-fed, common-to-medium heavy steers.

Although good-to-choice heifer calves proved profitable to feeders, their returns per \$100 worth of feed fed were slightly lower than those of steer calves of the same quality during each of the three feeding periods.

Another class of cattle, short-fed, common-to-medium yearling steers, which were bought in the fall and sold in the spring, brought good three-year average returns of \$137 per \$100 worth of feed fed. However, during the 1939-40 feeding period, their returns of only \$118 per \$100 worth of feed fed were lower for that year than those for any other class of cattle except common-to-medium heavy steers and yearling heifers.

During the three years, the lowest average returns for any class of cattle were \$107 per \$100 worth of feed fed, brought in during 1939-40 by short-fed, common-to-medium heavy steers. However, this class, which was bought in the fall and sold in the spring, brought in three-year average returns of \$139 per \$100 worth of feed fed.

Returns due to spread between purchase and sales prices. The largest increase in value per head of any class of cattle (\$13.32), resulting from the spread between the purchase price and sales price, was obtained from short-fed, good-to-choice heavy cattle. This gain was due both to the wide three-year-average spread of \$1.50 per 100 pounds, as well as to the heavy three-year-average weight of 888 pounds per head for this class at the time of purchase.

The smallest increase in value per head (\$2.89), due to spread between purchase price and sales price, was obtained from good-to-choice heifer calves. This class was the lightest of all at the time of purchase (419 pounds) and had the narrowest three-year-average spread between purchase price and sale price, 69 cents per 100 pounds.

Returns due to difference between feed cost and sales price. The largest increase in value per head resulting from the difference between feed costs and sales prices were obtained from good-to-choice steer calves. The large average gain of 557 pounds per head and the difference of \$2.80 per 100 pounds between the feed cost and selling price accounted for their large difference between the same items of \$15.60 per head.

Long-fed, good-to-choice yearling steers and good-to-choice heifer calves ranked second and third among the seven classes of cattle in increase in value per head resulting from the difference between the cost of the feed and the selling price. Their three-year average differences were \$9.29 and \$6.44, respectively.

During each of the three feeding periods, the feed cost per 100 pounds gain of short fed, common-to-medium heavy steers was larger than their sales price, while the three-year average feed cost of short-fed common-to-medium yearling steers equalled their sales price. Profits on both classes of cattle resulted from the difference between their purchase and sales prices.

In the case of good-to-choice steer calves, good-to-choice heifer calves, and good-to-choice yearling steers, the total profit per head was due more to the difference between the feed cost per 100 pounds gain and the sales

TABLE 2.—PERCENTAGES OF SILAGE-FED AND NONSILAGE-FED DROVES OF CATTLE THAT PRODUCED PROFITS ABOVE FEED AND OTHER COSTS^a

Feeding period	Silage-fed	Nonsilage-fed
	<i>percent</i>	<i>percent</i>
1938-39.....	77.8	80.5
1939-40.....	62.0	65.4
1940-41.....	54.2	81.3
Three-year average.....	64.7	75.7

^aIn this comparison it was assumed that feed and other costs amounted to \$125 per \$100 worth of feed fed.

price than to the spread between the purchase and sales prices. On the contrary, for the other classes of cattle for which records were obtained, the total profit per head was due more to the difference between the purchase and sales prices than to the difference between the feed cost per 100 pounds gain and the sales price. These facts are in accord with common knowledge among experienced cattle feeders who recognize that much of their success in feeding short-fed heavy cattle is due to careful buying and selling, while much of their success in feeding good-to-choice calves and yearlings is due to efficient feeding.

A study of the records of individual droves of cattle shows that careful buying and selling and careful feeding are always important, regardless of the class of cattle being fed.

Silage-Feeding Experiences

Silage was fed to approximately 40 percent of the cattle on which records were obtained. Of these silage-fed cattle, during the three years, 1938-1941, an average of 64.7 percent of the droves brought in more than \$125 returns per \$100 worth of feed fed (Table 2). (In making these comparisons, it was assumed that feed and other costs amounted to \$125 per \$100 worth of feed fed.) An average of 75.7 percent of the droves of nonsilage-fed cattle brought more than \$125 returns per \$100 worth of feed fed. This evident advantage of nonsilage-fed cattle was apparent during each of the three feeding periods.

The large quantities of low-priced legume hay available during recent years has tended to increase the profitability of feeding cattle grain and hay rather than grain, silage, and hay.

Pasture-Feeding Experiences

Nearly one-half of the summer-fed cattle were fed on pasture during a part or all of the feeding period. More of the pasture-fed cattle than of those fed on drylots produced average profits above feed and other costs

TABLE 3.—PERCENTAGES OF DROVES OF CATTLE SUMMER-FED ON PASTURE AND SUMMER-FED IN DRYLOTS THAT PRODUCED PROFITS ABOVE FEED AND OTHER COSTS^a

Feeding period	Pasture-fed	Drylot-fed
	<i>percent</i>	<i>percent</i>
1938-39	85.2	62.1
1939-40	78.3	84.6
1940-41	82.7	52.4
Average	82.1	66.4

^aIn this comparison it was assumed that feed and other costs amounted to \$125 per \$100 worth of feed fed.

during the three feeding years (Table 3). This was particularly true during 1938-39 and 1940-41. The records show that a larger proportion of the droves of drylot-fed cattle than of those which were pasture-fed returned some profit in 1939-40. However, a study of the records of the different droves that season shows that only 15.4 percent of the drylot-fed cattle returned more than \$160 for \$100 worth of feed fed, while 47.8 percent of the pasture-fed cattle returned more than \$160 for \$100 worth of feed fed.

It is evident that feeding cattle on pasture is a profitable enterprise under conditions similar to those existing during the past few years.

M. L. MOSHER

SOIL CONSERVATION PRACTICE AND WARTIME AGRICULTURAL PRODUCTION

The global war with its attendant demands for food for our fighting forces, the necessity of providing food and fibre for our allies and the victims of aggressor nations, as well as the increased domestic demand, calls for maximum production from our agricultural plant. The achievement of the agricultural production goals for 1943 will require that Illinois farmers produce one of the largest acreages of intertilled crops (principally corn and soybeans) on record.

Need for conservation practices. In a study of the possibilities for increasing agricultural production in Illinois in 1943, made by the Illinois Agricultural Experiment Station and the United States Department of Agriculture, the soils of each county were classified according to the level of productivity and the slope of the land, to provide a basis for estimating the maximum proportion of the land that could be planted to the two crops of major wartime significance—corn and soybeans—without irreparable damage to the soil for a period of five years if necessary.

TABLE 1.—AVERAGE PER ACRE YIELDS OF CROPS GROWN ON THE CONTOUR AND NOT ON THE CONTOUR ON THE SAME FARMS, THREE-YEAR AVERAGE, 1939 TO 1941

Item	Corn	Soybeans	Oats
Number of farms	121	14	33
Yield on contour (bu.)	64.5	22.8	43.8
Yield not on contour (bu.)	56.8	19.5	33.6
Number of farms on which the crop on the contour yielded higher	90	12	30
Difference in yield in favor of contouring (bu.)	7.7	3.3	10.2

This study showed that if all of the level upland (land having less than a two percent slope) plus the tillable bottomland were used according to the above wartime maximum land use recommendations, approximately 9½ million acres in Illinois would be available for intertilled or cultivated crops, whereas the 1943 production goals will necessitate approximately 12½ million acres being planted to cultivated crops. Thus, if all of the level and nearly level land is used according to maximum recommendations, approximately 3 million acres or 25 percent of our cultivated acres in 1943 will have to be grown on land having more than a 2 percent slope. While conservation practices are urgently needed on much of the land having less than 2 percent slope if sheet erosion is to be avoided, it is extremely important that erosion control practices be employed on all land having more than 2 percent slope if it is to be cultivated without doing irreparable damage to the soil.

Benefits of contour farming. One of the most simple and inexpensive erosion control practices to use on sloping land is contour farming, along with grass waterways. The value of contour farming (either strip cropping, contour farming with terraces, contour farming with buffer strips, or contour farming the entire field with the same crop) in controlling erosion and increasing yields is recognized in the 1943 A.A.A. program and payments will be made for the use of these practices.

Studies conducted by the Department of Agricultural Economics, College of Agriculture, and the Division of Economic Research, Soil Conservation Service, show that contour farming reduces erosion losses and generally results in higher crop yields. Results of contour farming obtained from detailed farm account record studies on farms of soil conservation cooperation farms in Madison, McLean, St. Clair and Stephenson counties for the three years 1939-1941 are summarized in Table 1.

The above results clearly show the yield advantages from the contour planting and tillage of the three principal spring planted crops in Illinois. Significance is added to the above results by the fact that they were secured on the same farms on which part of the crop was grown on the

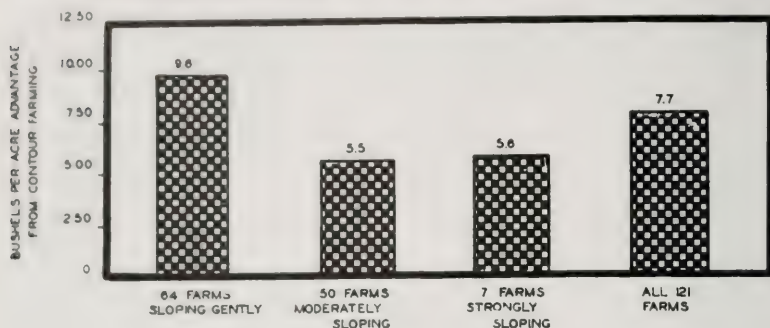


FIG. 1.—YIELD ADVANTAGE FROM CONTOURING CORN BY SLOPE GROUPS

contour and part was grown up-and-down hill or by the usual planting arrangement, and it is logical to assume that in the majority of cases the contoured portion of the crop was planted on the more strongly sloping land. The importance of contour farming even the more gently sloping land is graphically shown above (Fig. 1). The same 121 farms in Table 1 having corn on the contour and not on the contour were grouped according to the slope of the land and the yield benefits of contouring computed.

Costs of contour farming. In a study of farm operating costs, farms on which all or a large part of the farming operations were on the contour were matched with comparable neighboring farms on which none of the field operations were on the contour. The results of this study on 135 farms for the years 1940-41 (Fig. 2) show that horse and machinery costs and labor costs per crop acre were practically the same on the two groups of farms. Where contour farming was practiced, the total farm operating expense increased in proportion to the amount of livestock kept.

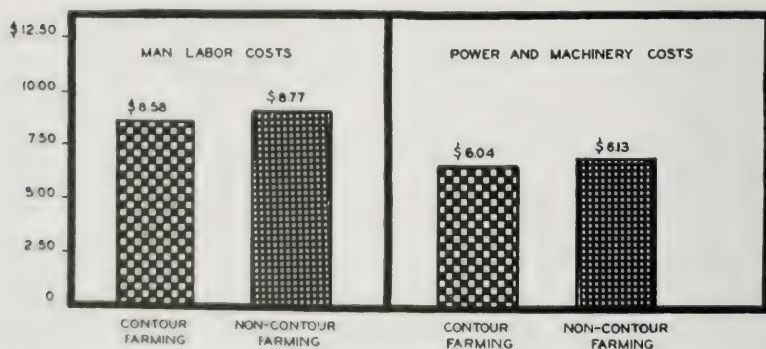


FIG. 2.—MAN LABOR COSTS AND POWER AND MACHINERY COSTS PER CROP ACRE ON 135 CONTOUR-TILLED FARMS COMPARED WITH 135 FARMS NOT CONTOUR TILLED

The labor and machinery shortage during the present emergency make it doubly important that farmers till their undulating and sloping land on the contour as means of boosting production with available labor and machinery.

In view of the wartime production needs and the physical limitations of the land, the evidence in favor of increased yields and erosion control at no increase in farm operating costs from contour farming, and the A.A.A. payments to encourage use of erosion control practices, contouring should be the number one practice on all farms where sloping land will be used for crop production in 1943.

E. L. SAUER

ILLINOIS LAND VALUES IN 1940 AND SINCE

Two-year changes in farmland prices in 6 counties studied in Illinois give some idea of what has taken place since 1940, when farmland prices in Illinois had the highest state average west of the Delaware River. In two counties recorded land prices in the first 6 months of 1942 were less than in 1940 from \$2 to \$4 per acre, whereas in 4 counties they were higher by \$2 to \$23 per acre. One of the counties showing a smaller recorded average per acre was in northern Illinois (McHenry county) and the other in southern Illinois (Clinton county).

The four counties showing an advance were as follows: Champaign, \$23 (from \$119.50 to \$142.50); Logan, \$15.50 (from \$120 to \$135.50); Ogle, \$15.50 (from \$82.50 to \$98.00); and Knox, \$2 (from \$84.50 to \$86.50). High-yielding corn and soybean areas are believed to have been prominent in land price advances.

The number of voluntary sales of farmland in 6 Illinois counties (obtained along with most of the specific information in the early part of this statement in a special land market survey by the U. S. Bureau of Agricultural Economics and the University of Illinois Agricultural Experiment Station) for 3 half-year periods, beginning January 1, 1941, are shown in the table on page 398.

For each 1,000 farms in the 6 counties in 1940, the number sold in the first half of 1942, 32, was not notably different from the number sold in the first half of 1941, 30, or in the second half of 1941, 29. In the five years from 1938 to 1942 the estimated number of farms changing ownership in the state has been from 60 to 64 per 1,000 farms annually. Forced sales and related defaults accounted for about 12 of these in 1938 but for only about 6 in 1942; inheritance and gifts accounted for about 9 in 1938 and for about 5 in 1942; administrators' and executors' sales accounted for 3 in 1938 and for 11 in 1942; while voluntary sales and

	Farms ^a	Voluntary sales			Voluntary sales per 1,000 farms ^b		
		1941		1942	1941		1942
		First half	Second half	First half	First half	Second half	First half
Champaign	3 122	29	55	63	9	18	20
Clinton	1 724	34	43	32	20	25	18
Essex	2 609	92	62	116	35	23	44
Logan	1 973	59	40	71	30	20	35
McHenry	2 535	125	152	102	49	60	40
Ogle	2 780	96	58	71	34	21	26
Total and aver...	14 743	435	410	455	30	29	32

^aU. S. Census of Agriculture. ^bEstimated.

trades accounted for 27 in 1938, 36 in 1941, and 41 in 1942. Trades are omitted as far as practicable from the 6-county study, and the results are believed to have representative value for the state as a whole.

The voluntary transfers of the past few years are probably about twice as numerous as during the period from 1933 to 1936, for example. In fact, if the 6-county result can be considered as representative of Illinois, voluntary sales have been more frequent in 1941 and 1942 than were both voluntary sales and trades in most of the 14 years from 1926 to 1940 during which time the U. S. Bureau of Agricultural Economics has been obtaining such estimates.

Who were selling the farms? In Illinois in the first half of 1942, owner operators sold 16 percent of the farms sold; nonfarmers, 42 percent; unclassified individuals, 15 percent; estates, 20 percent; and corporations and the public, 7 percent.

Buying farms in Illinois were owner operators, 24 percent; tenants and other farmers, 11 percent; nonfarmers, 48 percent; unclassified individuals, 16 percent, and corporations, less than 1 percent. Among owner operators more were buying than selling; more nonfarmers were buying than selling; more corporations were selling than buying.

Farms purchased for owner operation in the first half of 1942 were to replace land lost in 1 case, land sold in 9 cases, to add to present farm in 46 cases, and to constitute other operating units in 38 cases. In 3 Illinois counties, cash was paid in full in 55 percent of the cases, and cash and mortgage in 45 percent. In 44 mortgaged tracts purchased, the buyer's equity in the mortgaged property was 41 percent. In cases where mortgages were used in financing land transfers, 10 percent were retained by the seller, mortgages were assumed by 22 percent, and in 68 percent of the cases there were new mortgages.

In 4 Illinois counties in the first half of 1942, 19 percent of the new mortgages given to facilitate land transfers were by individuals; 12 percent, by Federal Land banks; 32 percent, by insurance companies; 28 percent, by commercial banks; and 9 percent, by the Farm Security Administration and other agencies.

In 355 cases in 5 Illinois counties 27 of the tracts had down payments of 15 percent or less; 7, of 16 to 20 percent; 15, of 21 to 25 percent; 23, of 26 to 33 percent; 33, of 34 to 49 percent; 68, of 50 to 99 percent; and 182, 100 percent. Thus over half were full down payments with independent credit in numerous instances, and nearly 70 percent paid down half or more of the price.

Of the tenants purchasing in Illinois, over 28 percent made full cash down payments. This included some cases where federal funds paid off the former owner. Of owner operators buying farms, 48 percent paid all cash, and of nonfarmers, 64 percent.

The results from the 6-county survey of Illinois land values can be compared with certain results for the state as a whole. From March, 1940, to March, 1942, the Federal-State Crop Reporting Service data indicates for Illinois an increase of 15 percent in the price of farm land and buildings per acre. In Indiana the increase was 19 percent; in Arkansas, 17 percent; in Ohio and South Carolina, 16 percent. These surpassed that of Illinois, while Michigan, Mississippi, and Wyoming equalled it. In these 8 states, the percentage increase was about twice that for the country as a whole, namely, 8 percent.

Compared with 1933 the values attained in 1942 had advanced 74 percent in North Carolina, 67 percent in Mississippi, 66 percent in Indiana, 66 percent in Kentucky, and 59 percent in Illinois. All other states but three showed increases. The decreases were in South Dakota, 24 percent; North Dakota, 17 percent; and Nebraska, 14 percent—three states heavily hit by persistent drought conditions. In the country as a whole, the 9-year increase was 25 percent.

Illinois values at \$94 per acre were still below those of 4 states on the seaboard, Connecticut, \$141; New Jersey, \$135; Rhode Island, \$125; and Massachusetts, \$110. Illinois in 1942 was also still 14 percent below her 1909-1914 average value of farm land and buildings per acre.

Will Illinois farm land be back at its old prewar par in 1943? An advance of \$15 per acre over March, 1942, is more than probably will be achieved in one year, partly because many farmers foresee heavy outlays for wages and taxes, and shortages in labor service and in equipment which make it seem wiser to go easy on bidding up land prices.

C. L. STEWART

*Cooperative Extension Service in
Agriculture and Home Economics*

U. S. Department of Agriculture
Cooperative Agricultural Extension
Work—Acts of May 8 and June 30, 1914.

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁹	Factory payrolls ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ¹	Prices paid by farmers ¹	U. S. in money ⁵	Illinois				
	All commodities ²	Farm products ³				In money ⁶	In purchasing power ⁷			
Base period.....	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929.....	95	105	104	99	103	103	104	110	110	110
1930.....	86	88	89	94	83	87	93	100	89	91
1931.....	73	65	62	80	58	58	72	84	68	75
1932.....	65	48	41	69	43	43	62	66	47	58
1933.....	66	51	45	71	49	51	72	62	50	69
1934.....	75	65	61	80	57	55	69	72	64	75
1935.....	80	79	82	81	64	65	80	78	74	87
1936.....	81	81	86	80	74	82	103	89	86	103
1937.....	86	86	96	84	80	87	103	98	102	113
1938.....	79	69	69	80	72	81	101	92	78	89
1939.....	77	65	65	78	72	81	97	99	92	108
1940.....	78	68	69	79	78	90	113	106	105	123
1941.....	87	82	87	85	101	116	136	129	149	155
1941 Oct.....	92	90	93	90	112	161	179	134	167	163
Nov.....	92	91	93	91	112	142	156	135	165	166
Dec.....	94	95	99	92	134	162	176	139	170	167
1942 Jan.....	96	100	104	94	132	146	155	143	174	171
Feb.....	97	101	106	95	127	134	141	147	178	172
Mar.....	98	103	108	97	127	154	159	146	183	171
Apr.....	99	104	111	98	136	143	146	150	188	173
May.....	99	104	112	99	130	144	145	155	193	174
June.....	99	104	110	99	131	149	151	159	198	176
July.....	99	105	111	99	132	125	126	157	204	180
Aug.....	99	106	115	99	143	128	130	161	215	183
Sept.....	100 ¹¹	108 ¹¹	114	99 ¹¹	146 ¹¹	...	...	...	220 ¹¹	185 ¹¹
Oct.....	100 ¹¹	109 ¹¹	115 ¹¹	100 ¹¹	...	...	...	...	...	188 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			November 1941	Current months		
	1924-29	1940	1941		September	October	November
Corn, bu.....	\$.81	\$.56	\$.63	\$.62	\$.80	\$.73	\$.73
Oats, bu.....	.42	.32	.36	.42	.45	.44	.45
Wheat, bu.....	1.30	.81	.93	1.03	1.15	1.15	1.16
Barley, bu.....	.66	.46	.55	.62	.73	.75	.75
Soybeans, bu.....	1.94	.82	1.24	1.46	1.59	1.59	1.59
Hogs, cwt.....	9.97	5.54	9.37	9.80	13.90	14.40	13.60
Red cattle, cwt.....	8.57	8.84	10.07	10.00	12.40	12.50	12.50
Lamb, cwt.....	12.22	8.52	9.85	9.90	12.20	12.60	13.20
Milk cows, head.....	78.00	65.00	80.00	87.00	105.00	105.00	110.00
Veal calves, cwt.....	11.27	9.63	11.19	11.80	14.10	14.00	14.00
Sheep, cwt.....	6.52	3.44	4.43	4.60	5.50	4.90	5.30
Butterfat, lb.....	.42	.27	.33	.38	.41	.45	.46
Milk, cwt.....	2.42	1.67	2.05	2.50	2.45	2.55	2.70
Eggs, doz.....	.40	.17	.22	.33	.30	.32	.34
Chicken, lb.....	.21	.13	.15	.15	.20	.19	.19
Wool, lb.....	.46	.30	.37	.40	.41	.41	.40
Apples, bu.....	1.59	1.14	1.07	.95	1.30	1.30	1.50
Pears, bu.....	13.88	6.68	8.49	9.60	10.00	10.80	11.50
Potatoes, bu.....	1.39	.83	.82	.85	1.15	1.20	1.20

¹¹For source of data in tables see previous issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

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THE CURRENT SITUATION AND OUTLOOK

The year 1942 was characterized by bumper crops and excellent prices. The combination resulted in a very satisfactory level of farm income for Illinois farmers. Cash income from marketings by Illinois farmers for the nine months, January to September inclusive, totaled \$641,049,000 in 1942 compared to \$474,170,000 for the same months in 1941 and \$390,504,000 in 1940. Income from farm marketings for the country as a whole also increased about one-third as the result of a 25 percent rise in prices and a 12 percent increase in sales.

It is anticipated that Illinois farm income will remain high through 1943. Prices of farm products will average somewhat higher than in 1942 and more livestock will be sold. A highly uncertain factor affecting 1943 income will be that year's crop yields. Government estimates of income from marketings for the United States for 1943 at 16 billion dollars compared to 15 billion dollars in 1942 are based upon some increase in the production of livestock and livestock products and some decline in the total volume of crops.

Although there are price ceilings on many products farmers buy, there is no effective ceiling on farm wage rates. Wage rates are rising since hired labor is scarce and it is probable that other costs of production will also rise per unit of output, particularly if crop yields should decline from the very favorable 1942 level. The 1 billion dollar increase in gross income is not likely to result in a comparable increase in net income. Nevertheless, 1943 promises to be a highly profitable year for

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

most Illinois farmers. For dairymen it may not be as profitable as for other livestock farmers. The position of grain farmers is likely to improve relative to that of hog raisers and feeders.

G. L. JORDAN

FARM WAGES, FARM PRICES, AND INCOME

Current discussion of farm labor frequently raises questions as to how much hired labor is worth to the farmer or what wages the farmer can afford to pay. Although not yielding complete answers to such questions, one approach to

the problem is to make a comparison of wage rates and farm prices, and of labor costs and farm incomes over a period of years.

Illinois farm prices and farm wage rates. Both farm prices and farm wage rates have risen sharply during the past two years, the rise in wages continuing an upward trend

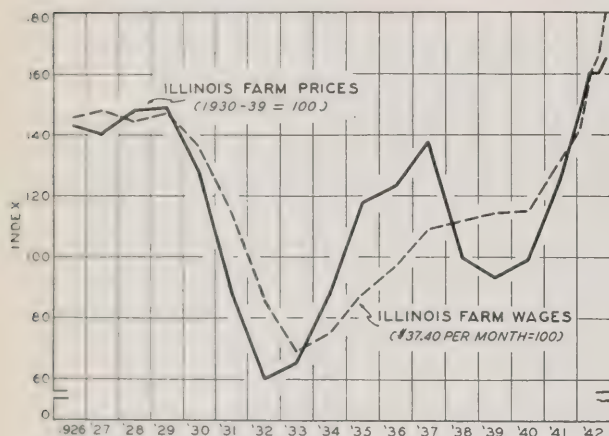


Fig. 1.—Farm Prices and Farm Wages, Illinois, 1926-1942. (1930-1939 = 100)

that has been consistent since 1933 (Figure 1 and Table 1). For the year 1942 as a whole, the relationship between Illinois farm prices and monthly wage rates was almost exactly the same as the average of the 10-year period, 1930-1939. During the year, however, wage rates have increased more than prices and are at a relatively higher level at the close of the year. In April 1942, both the wage rate and price indexes were at 160; in October, wages were at 181 and prices at 165. These data reflect the growing seriousness of the labor situation in the latter part of the year and afford a basis for concern over price and wage relationships in 1943.

Changes in the prices of particular farm products affect the ability of farms of different types to pay for hired labor. In this analysis, the relationship between the farm price of a particular product and wages is expressed in terms of the quantity of that product required to pay for one month of hired labor without board (Table 2). As an average for

the state as a whole during the 10-year period, 1930-1939, the cost of a month of hired labor was equal to the value of 82 bushels of corn, 588 pounds of hogs, or 2,270 pounds of milk. For the period, 1926-1942, these relationships are presented in Table 2 and in Figure 2 in which they

TABLE 1.—FARM PRICES AND FARM WAGES, ILLINOIS, 1926-1942

(Index: 1930-1939 = 100)

	Farm price index	Monthly wage rate (without board)		Ratio of wage rates to prices ¹
		Dollars	Index	
1926.....	143	\$54.50	146	102
1927.....	140	55.25	148	106
1928.....	148	53.88	144	97
1929.....	149	54.88	147	99
1930.....	128	50.94	136	106
1931.....	88	42.94	115	131
1932.....	60	32.00	86	143
1933.....	65	25.75	69	106
1934.....	87	28.16	75	86
1935.....	118	32.62	87	74
1936.....	123	36.19	97	79
1937.....	138	40.81	109	79
1938.....	100	41.94	112	112
1939.....	93	42.62	114	123
1940.....	99	42.88	115	116
1941.....	125	49.12	131	105
1942—January.....	149	53.00	142	95
April.....	160	60.00	160	100
July.....	160	62.00	166	104
October.....	165	67.75	181	110
Average—1930-1939.....	100	\$37.40	100	100

¹Index of monthly wage rate divided by index of prices of farm products.

TABLE 2.—QUANTITIES OF FARM PRODUCTS EQUAL IN VALUE TO ONE MONTH OF LABOR, 1926-1942

Year	Corn	Hogs	Milk
	<i>bushels</i>	<i>pounds</i>	<i>pounds</i>
1926.....	79	450	2 370
1927.....	65	564	2 402
1928.....	67	619	2 293
1929.....	72	572	2 335
1930.....	94	566	2 315
1931.....	172	704	2 386
1932.....	119	901	2 370
1933.....	52	696	2 060
1934.....	36	663	1 944
1935.....	51	371	2 175
1936.....	34	377	2 011
1937.....	87	416	2 148
1938.....	91	524	2 542
1939.....	82	666	2 750
1940.....	69	780	2 599
1941.....	78	524	2 396
1942—January.....	73	486	2 120
April.....	79	438	2 727
July.....	77	443	2 818
October.....	90	464	2 710
Average—1930-1939.....	82	588	2 270

are expressed as percents of the 1930-1939 averages. For both 1941 and 1942, hog prices have been the highest (of these selected products) and milk prices the lowest in relation to farm wages. In October 1942, the

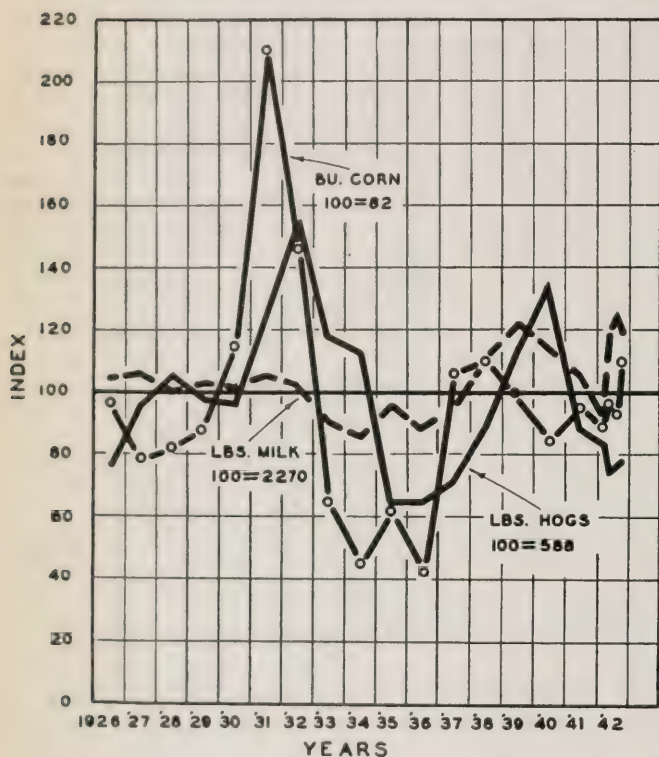


Fig. 2.—Indexes of Bushels of Corn, Pounds of Hogs, and Pounds of Milk Equal in Value to the Cost of One Month of Hired Labor, Illinois, Annual 1926-1941 and Quarterly 1942. (1930-1939 = 100)

cost of a month of labor without board was equivalent to 464 pounds of hogs, or 79 percent of the 10-year average, to 90 bushels of corn, or 110 percent of the 10-year average, and to 2,710 pounds of milk, or 119 percent of 1930-1939. While these comparisons are in part affected by the seasonally low October price for corn and the seasonally high price for hogs, they clearly indicate the favorable position of hog prices and the relatively unfavorable position of milk prices in relation to wage rates. The position of the dairy farmer is further indicated by the fact that, on a yearly basis, it has required more pounds of milk to equal the cost of a month of hired labor in each of the years since 1937 than in any year from 1928 through 1937.

The use of state average wage rates and prices in the above analysis does not reveal wage-price relationships in different areas of the state. It is apparent, however, that the use of area prices and wages would show that more pounds of milk, pounds of hogs, or bushels of corn are required to equal the value of a month of hired labor in northern Illinois than in central or southern Illinois.

Farm incomes and labor costs. The price of farm products is not necessarily a good measure of the ability of a farmer to pay farm wages

or of how much a hired man is worth. The volume of products that can be produced and sold at the existing prices is another important factor. For instance, referring to Table 2, the two years, 1934 and 1936, when it took only 36 and 34 bushels of corn to equal a month's wages, were both years of very poor corn crops, and the farmer paying for labor with sales of corn was not necessarily in a favorable position.

A comparison of incomes and total labor costs on Illinois accounting farms shows that the proportion of the total income needed to pay hired labor and make a comparable allowance for family labor has declined steadily in recent years.¹ In 1941 and 1942, approximately 16 percent of the gross income was required for this purpose, the lowest percentages since 1926 (Figure 3).

This decline in the proportion of income required to meet labor costs on the accounting farms is associated with an increase in the average size of farm, with the adoption of labor-saving machinery and improved production methods, and with rising farm prices. Since the decline in labor costs, in relation to income, is attributed in part to the increased use of power machines, it is significant to note that, for the state as a whole, the proportion of income needed to meet power and machinery costs has also decreased slightly during recent years.

The influence of increased mechanization since 1926 is shown by comparing costs in two 4-year periods, 1926-1929 and 1937-1940, in selected areas of the state. On the farms keeping accounts, the proportion of income needed to meet total labor costs declined between these two periods in all areas of the state as indicated by the data on the following page.

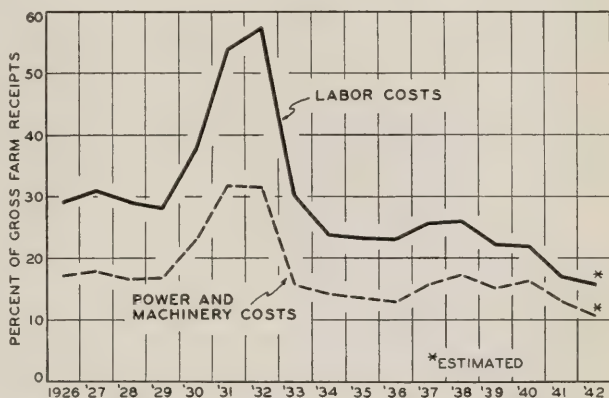


Fig. 3.—Total Labor Costs and Power and Machinery Costs as Percentages of Gross Farm Receipts, Illinois Accounting Farms, 1926-1942

¹In the accounting records the operator's and unpaid family labor was charged as an operating expense at hired man's wages. The labor cost therefore fluctuated with changes in farm wages, but did not measure what the farm family took from the farm business.

	Labor costs		Power and machinery cost	
	1926-29	1937-40	1926-29	1937-40
State average.....	29.4%	23.6%	17.0%	16.0%
Chicago Dairy Area.....	28.4	25.8	17.3	16.5
Western Illinois Livestock Area.....	27.0	20.2	15.1	14.6
Central Illinois Grain Area.....	25.4	19.4	14.8	15.5
St. Louis Dairy and Wheat Area.....	35.1	27.6	20.2	17.9

There was relatively little decline in the Chicago Dairy Area due to the fact that total income per farm was less in the later period, although both labor costs and power and machinery costs per farm were also less.

In both the Western Illinois Livestock Area and the Central Illinois Grain Area, the proportion of income needed to meet labor costs declined more than for the state as a whole; gross incomes increased materially, total labor costs per farm declined, and power and machinery costs increased. These changes were particularly pronounced in the Central Illinois Grain Area where mechanized production has been most highly developed.

From this analysis it is apparent that improvements in production methods and increased mechanization have resulted in savings of labor and lower operating costs in relation to income. With the higher prices and higher incomes of 1941 and 1942, the proportion of total income needed to meet these costs dropped to new low levels. Under the conditions prevailing in 1942, and likely to prevail in 1943, it is to the farmers' financial interest to use labor from sources not formerly required and to pay the wages necessary to maintain production. The strong demand for farm products means that large quantities can be marketed at favorable prices, and it is both patriotic and profitable to incur additional expense and inconvenience to maintain high production.

J. E. WILLS and P. E. JOHNSTON

SOME SYSTEMS OF FARMING MAKE BETTER USE OF AVAILABLE LABOR THAN OTHERS

The fact that the number of men available to do necessary farm work will be limited for the duration of the war is one of the most difficult problems that must be solved on the home front. Some of the strain on farm labor can be relieved by changing the kinds and amounts of crops and livestock produced in order to eliminate many of the seasonal peaks in labor requirements, and some of it may be relieved by utilizing the unemployed time of nonagricultural folks and by exchanging labor with

one's neighbors. On many farms, however, this problem will need to be solved by utilizing more fully the man labor left on the farm.

The food production goals for 1943 call for more corn, hogs, and poultry than were produced in 1942, as well as slight increases in some other corn-belt products. The increase in seasonal labor demands that will arise from the need for more corn will be offset in part by the lower 1943 goal of soybeans, and the increase in production of hogs and poultry will give an opportunity to even out the year's labor load.

By nature, agriculture is an industry of high and low seasonal labor demands; but the relatively recent adaptation of the tractor to row cultivation, and the introduction of the combine, corn picker, and pick-up baler have materially lowered the hours required on certain peak-load jobs. The labor requirements of farms, and particularly the seasonal labor demands of crops and livestock, are revealed by long-time farm cost studies made by the Department of Agricultural Economics. These studies also show that although farms in east-central Illinois were larger in 1941 than in the early '20s, they were operated with 33 percent less man labor in 1939-1941 than in 1923-1925 (Figure 1). The studies further show that 20 of the 33-percent decline in hours of labor was the result of the farm labor force working fewer hours with the help of labor-saving machinery, while the remaining 13 percent was the result of releasing hired men.

Farming systems differ in monthly labor distribution. It is evident that

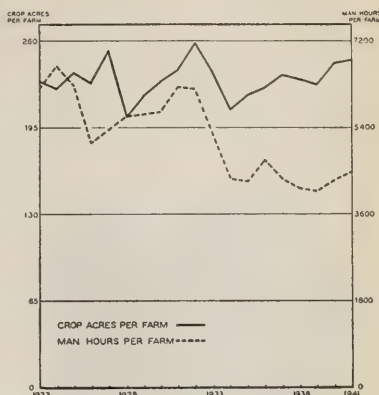


Fig. 1.—Crop Acres per Farm and Man Hours per Farm, 1923-1941, Champaign and Piatt Counties, Illinois

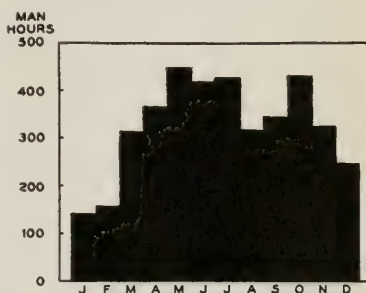


Fig. 2.—Hours of Man Labor per Month on a Typical 320-Acre Cash-Grain Farm, East-Central Illinois, Avg. 1939-1941

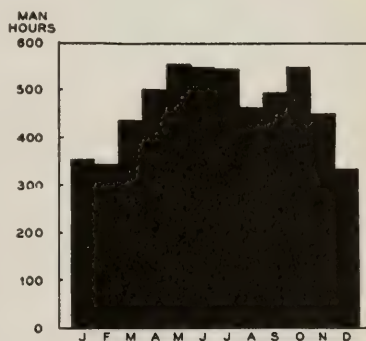


Fig. 3.—Hours of Man Labor per Month on a Typical 320-Acre Cattle-and-Hog-Feeding Farm Carrying 40 Feeder Steers and 90 Hogs, East-Central Illinois, Avg. 1939-1941

eliminating seasonal labor peaks on cash-grain farms where little live-stock is handled is going to need special attention. For example, the amount of labor required monthly during 1939-1941 on a group of 320-acre, cash-grain farms in east-central Illinois varied from 143 man hours

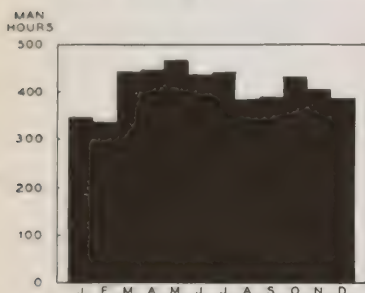


Fig. 4.—Hours of Man Labor per Month on a Typical 200-Acre Dairy Farm Carrying 21 Milk Cows and Replacement Dairy Stock, Northern Illinois, Avg. 1936-37

in January, the month of low labor requirements, to 447 man hours in May (Table 1, Figure 2). These cash-grain farms are experiencing the serious problem of obtaining labor necessary to do field jobs that must be finished within a certain time unless production on the farm is to suffer.

In the same area of the state, farms of 320 acres, on which approximately 40 steers were fed and about 90 hogs marketed, used 331 man hours in December, their month of low labor requirements, and 549 in May.

TABLE 1.—MONTHLY LABOR REQUIREMENTS AND HOURS WORKED PER WEEK BY MEN ON CASH-GRAIN, FEEDER-CATTLE-AND-HOG, AND DAIRY¹ FARMS IN ILLINOIS, 1939-1941

Month	Man hours per month on different types of farms			Man hours worked per week on different types of farms			
	Cash-grain	Feeder-cattle and hogs	Dairy	Operator	Hired man	Per man ²	Per man ²
				Cash-grain	Cash-grain	Feeder-cattle and hogs	Dairy
January	143	354	348	20.6	36.3	36.9	45.3
February	157	343	338	23.2	35.5	39.7	48.1
March	315	434	441	33.8	52.2	46.1	47.4
April	367	503	442	39.7	55.9	50.0	48.8
May	447	549	466	46.2	57.5	52.1	49.0
June	415	547	439	41.4	57.7	48.9	49.2
July	419	542	442	39.8	56.9	48.1	47.1
August	318	463	382	30.8	51.4	42.4	44.5
September	345	490	391	37.1	52.5	48.1	47.3
October	431	548	432	45.1	58.0	49.6	50.4
November	322	447	403	36.4	49.6	43.1	48.7
December	245	331	383	29.0	48.6	35.6	45.3
Total	3 924	5 551	4 907				
Acres in farm	320	320	200				
Number of livestock per farm:							
Dairy cows	4	2	21				
Young dairy stock ²	2	2	7				
Beef cattle	8	43	...				
Hogs	23	91	14				
Chickens	90	100	155				

¹Average for dairy farms, 1936-37. ²Animal units, including the bull. An animal unit of young stock consists of 2 heifers, not fresh but over 16 months of age, 2 yearlings, or 4 calves under 9 months of age.

Average of operator and regular monthly hired men.

the month of high labor requirements (Table 1, Figure 3). These farms not only contributed to the meat needs of the nation but were able to employ their labor profitably the year around. Records on cattle-and-hog farms show that only occasionally was the number of men needed for field work larger than the number employed in the regular labor force throughout the winter.

A milk cost study made on more than 90 dairy farms in the Chicago milk area shows that the average farm is 200 acres in size, and that it carries 21 milk cows, plus the accompanying young replacement dairy stock. According to results obtained from the study, this average 200-acre dairy farm used nearly 1,000 hours more man labor a year than did the 320-acre grain farm in east-central Illinois (Table 1, Figure 4).

However, the number of man hours worked on the 320-acre cash-grain farm during the peak month of labor demand was only 19 man hours less than the number worked on the 200-acre dairy farm during its peak labor month. But the labor problem of the dairyman is not that of finding seasonal labor; it is to get and hold year-around men.

Hours worked per week by farm labor. Prior to the war, farm laborers on dairy farms in the Chicago milkshed and in other northern Illinois milk-producing counties worked an average of about 48 hours a week the

year around (Table 1, Figure 5). Therefore, the possibility of increasing the hours of labor in the work week of these laborers is not very encouraging. But on cash-grain and meat-producing farms of Illinois, the urgency of increasing the hours of farm labor per work week will be more definite. Records kept on steer-and-hog-feeding farms in east-central Illinois show that their winter labor did not work quite 40 hours per week during December, January, and February in the three years, 1939-1941 (Table 1, Figure 6). The operators of these farms, however,

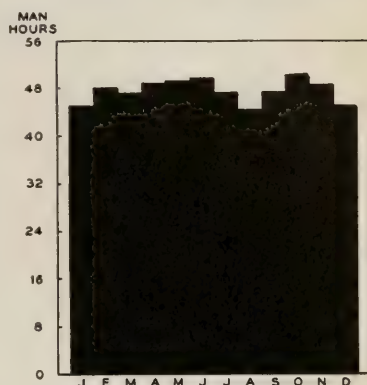


Fig. 5.—Hours Worked Weekly per Man on a 200-Acre Dairy Farm, Chicago Area, Avg. 1936-37

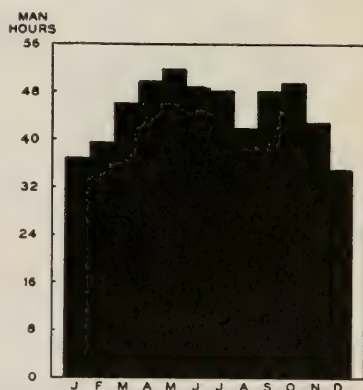


Fig. 6.—Hours Worked Weekly per Man on a 320-Acre Beef-Cattle-and-Hog Farm, East-Central Illinois, Avg. 1939-1941

produced a large amount of beef and pork in those years; and as they have the necessary buildings, equipment, and experience needed for successful meat-producing, they may well exert every means to increase their volume of winter meat production.

The operators and landlords of cash-grain farms have a great obligation to the nation and to themselves in

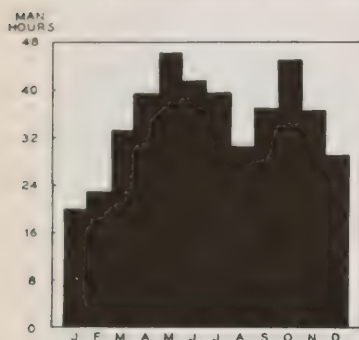


Fig. 7.—Hours Worked Weekly by Operator on a Cash-Grain Farm, East-Central Illinois, Avg. 1939-1941

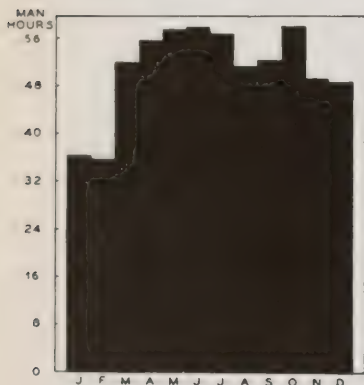


Fig. 8.—Hours Worked Weekly by the Hired Man on a Cash-Grain Farm, East-Central Illinois, Avg. 1939-1941

making more productive the available manpower on their farms during the winter months. Table 1 and Figures 7 and 8 show the hours worked by the operator and his regular hired men per week in each month of the year during 1939, 1940, and 1941. In January and February, the operator of the average 320-acre grain farm worked less than 25 hours a week. That he was capable of working much longer hours, however, is strongly indicated by the 45 hours he worked per week during May and October. Many cash-grain farmers are producing all the grain their soil will produce, and in doing so, they are contributing to the need for food. There is an opportunity for some of them, however, to use their winter labor in livestock production.

A thorough inventory of buildings and equipment on these grain farms showed that the tenants on most of them have shelter for an increased number of hogs and feeder steers without making much, if any, addition to the buildings now on the farms. An increase in the number of dairy cows and in the number of poultry

also can be made if landlords will cooperate to the extent of remodeling and improving the present buildings in order to house them.

Although farm women and children always have been a source of help in caring for dairy cows and poultry in normal times and although they are willing to put in more time at farm work in the emergency, it is questionable whether they should be called on to spend more of their time on jobs outside of the house than they spend now. Older men who have retired but who still live on farms can help in the lighter farm jobs,

and more nonagricultural workers and their sons can be brought into farm service. In each community, farmers, by exchanging help with each other and by using jointly all available labor-saving machinery, can relieve their local shortage of labor needed to handle seasonal jobs of planting and harvesting. But farm operators, especially those on cash-grain farms, still have an opportunity to use their own time more productively during the winter months in helping to produce the meat and other animal products needed to carry on the war.

R. H. WILCOX

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Special B. L. S. release, Jan. 24, 1941; Survey of Current Business, monthly issues, unadjusted for seasonal variation. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work—Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁹	Factory payrolls ⁸	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period . . .	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1923-25	1935-39
1929	95	105	104	99	103	103	104	110	110	110
1930	86	88	89	94	83	87	93	100	89	91
1931	73	65	62	80	58	58	72	84	68	75
1932	65	48	41	69	43	43	62	66	47	58
1933	66	51	45	71	49	51	72	62	50	69
1934	75	65	61	80	57	55	69	72	64	75
1935	80	79	82	81	64	65	80	78	74	87
1936	81	81	86	80	74	82	103	89	86	103
1937	86	86	96	84	80	87	103	98	102	113
1938	79	69	69	80	72	81	101	92	78	89
1939	77	65	65	78	72	81	97	99	92	108
1940	78	68	69	79	78	90	113	106	105	123
1941	87	82	87	85	101	116	136	129	149	155
1941 Nov.	92	91	93	91	112	142	156	135	165	166
Dec.	94	95	99	92	134	162	176	139	170	167
1942 Jan.	96	100	104	94	132	146	155	143	174	171
Feb.	97	101	106	95	127	134	141	147	178	172
Mar.	98	103	108	97	127	154	159	146	183	171
Apr.	99	104	111	98	136	143	146	150	188	173
May	99	104	112	99	130	144	145	155	193	174
June	99	104	110	99	131	149	151	159	198	176
July	99	105	111	99	132	125	126	157	204	180
Aug.	99	106	115	99	143	128	130	161	215	183
Sept.	100 ¹¹	108 ¹¹	114	99	146 ¹¹	138	140	170	220 ¹¹	185 ¹¹
Oct.	100 ¹¹	109 ¹¹	116	100 ¹¹	152 ¹¹	...	...	...	...	188 ¹¹
Nov.	100 ¹¹	111 ¹¹	115 ¹¹	100 ¹¹	...	...	...	...	...	...

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			November 1941	Current months		
	1924-29	1940	1941		September	October	November
Corn, bu.....	\$.81	\$.56	\$.63	\$.62	\$.80	\$.73	\$.73
Oats, bu.....	.42	.32	.36	.42	.45	.44	.45
Wheat, bu.....	1.30	.81	.93	1.03	1.15	1.15	1.16
Barley, bu.....	.66	.46	.55	.62	.73	.75	.75
Soybeans, bu.....	1.94	.82	1.24	1.46	1.59	1.59	1.59
Hogs, cwt.....	9.97	5.54	9.37	9.80	13.90	14.40	13.60
Beef cattle, cwt.....	8.57	8.84	10.07	10.00	12.40	12.50	12.50
Lambs, cwt.....	12.22	8.52	9.85	9.90	12.20	12.60	13.20
Milk cows, head.....	78.00	65.00	80.00	87.00	105.00	105.00	110.00
Veal calves, cwt.....	11.27	9.63	11.19	11.80	14.10	14.00	14.00
Sheep, cwt.....	6.52	3.44	4.43	4.60	5.50	4.90	5.30
Butterfat, lb.....	.42	.27	.33	.38	.41	.45	.46
Milk, cwt.....	2.32	1.67	2.05	2.50	2.45	2.65	2.70
Eggs, doz.....	.30	.17	.22	.33	.30	.32	.34
Chickens, lb.....	.21	.13	.15	.15	.20	.19	.19
Wool, lb.....	.36	.30	.37	.40	.41	.41	.40
Apples, bu.....	1.59	1.14	1.07	.95	1.30	1.30	1.50
Hay, ton.....	13.88	6.68	8.49	9.60	10.00	10.80	11.50
Potatoes, bu.....	1.39	.83	.82	.85	1.15	1.20	1.20

¹² For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture • University of Illinois • Department of Agricultural Economics

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EXPENSE OF FARM MACHINES FORMS BASIS FOR LOAN CHARGE WHEN MACHINES ARE BORROWED BY NEIGHBORS

The order of the War Production Board restricting 1943 manufacture of new farm machinery means that it will be necessary to utilize the machines now on farms more fully in 1943 than they have been in past years. The size of most farms cannot be increased to make more use of the machines now on them. However, one way to help meet the machinery shortage will be through the use of existing machines by more than one farmer, with the united purpose of producing and harvesting the increased amount of feed and food needed in 1943.

It usually is necessary to borrow farm machinery only when breakdowns occur and repair parts are not available. Under these conditions, the farmer who needs to borrow a machine to do his field work should be willing to pay a rental for it.

Farm cost studies which have been made on a group of farms in east-central Illinois have shown what it costs to own and operate the most generally used field machines. Such costs are shown in the left-hand column of Table 1 for individual machines used during 1940 and 1941. The machines were used on farms averaging 246 crop acres, where the land was level and the fields were large.

But the machines on which these cost figures were kept were operated on the farms of the owners, and most of them were operated by the owners themselves. In order to estimate the rental charge for each machine a sufficient sum must be added to the figures in Table 1 to cover

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

TABLE 1.—OPERATING EXPENSE OF TRACTORS AND POWER-DRAWN FARM MACHINES

	Kind of land on which machine is used	
	Smooth, level, large fields	Rough, hilly, small fields
Cost <i>per hour</i> of use, including gasoline and oil—not including a wage for the operator		
Tractor ^a		
9-to-16-drawbar horsepower	\$.45	\$.55
16-to-21-drawbar horsepower .....	.55	.65
21-to-30-drawbar horsepower .....	.65	.75
Cost <i>per acre</i> of use, including gasoline and oil—not including a wage for the operator		
Mounted cultivator and tractor		
2-row mounted cultivator and 9-to-16 horsepower tractor ^b ...	\$.34	\$.42
2-row mounted cultivator and 16-to-21 horsepower tractor ^c...	.31	.39
3-row mounted cultivator and 21-to-30-horsepower tractor ^d...	.21	.30
Cost <i>per acre</i> of power-drawn machines—not including power or a wage for the operator		
Tractor plow		
2-bottom	\$.21	\$.26
3-bottom .....	.23	.29
Harrow .....	.04	.05
Disk		
8-foot tandem .....	.07	.08
10-foot tandem .....	.05	.07
Rotary hoe .....	.07	.08
Corn planter		
2-row, horse-drawn type .....	.13	.16
2-row, tractor-drawn type .....	.15	.19
4-row, tractor-drawn type .....	.13	.17
Corn picker		
2-row, tractor-drawn type, not mounted	1.00	1.25
Grain drill		
8-or-10-foot .....	.13	.16
11-or-12-foot .....	.20	.25
Endgate seeder .....	.03	.04
Combine		
5-through-8-foot cutter bar	1.00	1.25
10-through-12-foot cutter bar .....	.88	1.10
Mower (hay)		
5-foot cutter bar, horse-drawn type .....	.20	.24
7-foot cutter bar, tractor-drawn type .....	.23	.28
Dump rake .....	.22	.27
Cost <i>per load</i> —not including power or wage of operator		
Manure spreader	\$.12	\$.15

^aThe gasoline and oil costs per hour included in the costs shown are:

 9-to-16-drawbar horsepower

 9-to-16-drawbar horsepower

 16-to-21-drawbar horsepower

 21-to-30-drawbar horsepower

 20 acres in 10 hours.

 26 acres in 10 hours.

 50 acres in 10 hours.

the amount of risk incurred on the machine by the owner when the machine is off his farm. That risk will vary with each borrower. In arriving at a just loan charge, the owner of a machine should consider: (1) the care with which the borrower or the borrower's hired help will operate the machine; (2) the attention that they will give to oiling or greasing the machine while it is off the owner's farm; (3) the responsibility which the borrower will assume in replacing broken parts; (4) the type of land on which the machine will be used, whether it is level and

in large fields or whether it is rough and broken by gullies or ditches. Land of the latter type usually is broken up into small fields and adds to the wear and tear on the machine.

R. H. WILCOX

TRANSPORTATION IN LIVESTOCK MARKETING¹

To win the war is our first responsibility. To that end efficient transportation—both military and civilian—is a necessity. Rubber is a critical material.

The report of the Baruch Committee summarized the United States rubber situation as follows:

Crude rubber on hand, July 1, 1942.....	578 000 tons
Estimated imports to January 1, 1944.....	53 000 tons
Total crude rubber.....	631 000 tons
Estimated military and other essential demands to January 1, 1944 (with no allowance for tires for passenger automobiles).....	842 000 tons
Deficit that must be met by synthetic rubber production before January 1, 1944.....	211 000 tons

Further, the committee said that tires on civilian cars are wearing down at a rate eight times greater than they are being replaced.

The necessity of tire conservation is admitted. The problem is how to accomplish it. Federal Offices can issue orders and establish the overall pattern, but most effective tire conservation will depend upon local initiative and cooperation.

County transportation program. Assuming the existence of a *functioning* transportation committee in each county—representing all groups interested in the transport of farm commodities—such a committee should:

1. Meet regularly.
2. Keep informed on all important matters affecting transportation of farm products in and from the county.
3. Seek efficient truck use by farmers.
4. Discourage hauling of part loads by farm trucks; encourage joining with a neighbor to make up a full load, or having the part load hauled by a commercial trucker who can handle it.
5. Urge farmers to list livestock with truckers 48 hours in advance (or more in the case of single animals or odd lots) to enable truckers to plan their loads.

¹As presented before Farm Advisers' Conference, University of Illinois, Urbana, on November 11, 1942.

6. Encourage truckers to insist on more efficient use of trucks by:
 - a. Hauling full loads—too many trucks hauling part loads to local markets and to auctions.
 - b. Minimum pickup driving.
 - (1) Pickups only when enough available to make up a full load.
 - (2) No out-of-way driving for any pickups of less than 1,000 pounds—ask farmers to bring smaller lots to the trucker's route.
 - c. Absolutely avoid overloading tires—especially with grain, limestone, and coal.
7. Inform truckers as to ODT tire-load capacity ratings.
8. Publicize careless use or abuse of trucks or tires—use local newspapers, local radio. Not necessary to mention names. Just tell what was done, when, and the circumstances. Public opinion is the most effective enforcer; help it to operate.
9. Make recommendations for more effective use of existing transportation setups.
10. Encourage, wherever and whenever practicable, coordination between rail and truck transportation.
11. Anticipate inadequacy in the county's transportation service because of shifts or changes and be prepared to meet them effectively.

Farm trucks important. For at least two reasons, farm trucks are of vital importance in the war program:

1. Nearly half of Illinois total truck mileage is run by farm trucks. On the basis of truck operations for the last year in Douglas and Henderson Counties—all trucks hauling farm commodities—farm trucks accounted for 49 percent of the total mileage in Douglas County, and for 56.5 percent of the total in Henderson County. If truck and tire conservation is to be fully achieved, farm trucks must do their part.

2. To the extent that for-hire trucks are forced out of service—through shortage of tires, lack of repair parts, or scarcity of drivers—farm trucks must take up the slack. Fortunately, a large part of the farm truck tires promise to last at least two years, although more intensive use would reduce this quickly.

The general situation. Our entire transportation setup, rail and truck, is operating under control of the Office of Defense Transportation. The job faced by our transportation service is enormous.

The railroads are loading nearly 1,000,000 cars of freight every week, are reported to be handling 30 percent more freight and 50 percent more passenger traffic in 1942 than in 1941, in terms of tons and passenger miles. They anticipate a 15-percent increase in passenger traffic in 1943. We believe the railroads will perform their part of the task.

Truck Transportation is hampered by tire shortage, by lack of parts and repairs, and by availability of drivers. Just last month an ODT official told a group of experiment station workers that more trucks were then laid up for want of repairs than from lack of tires. New trucks are out—only 40,000 remaining in the nation's stockpile out of 150,000 on hand at the first of this year.

The remainder of this discussion deals primarily with trucking.

ODT orders. Any consideration of the trucking situation must include attention to applicable ODT orders. Among these are:

April 20, orders requiring loads of 100 percent of capacity in one direction, of at least 75 percent of capacity in the other direction. Trucks engaged exclusively in hauling livestock and other agricultural commodities from the farm and supplies to the farm, are exempt from this backhaul requirement until the 30th of November.¹

July 2, orders directing the establishment of joint information offices to furnish information to truckers on available backhauls and to issue clearances where return loads were not available.

A branch office was set up by market agencies at the Chicago Union Stock Yards, ready for service on August 1, and has not yet been approved by the ODT. Plans have been made to put the branch in full operation when the backhaul requirements are put into effect. Market agencies at Cincinnati set up one of the first of these offices, still without approval of ODT. At Cincinnati it is reported that the downtown Joint Information Office, to help defray expense of that office, proposed that livestock truckers pay what appear to be unreasonable charges for return loads and clearance certificates, whereas the market agencies offered to render this service without any charge to truckers.² Efforts are being made to clear this situation.

July 23, orders that truck mileage must be restricted to 75 percent of the 1941 mileage. Livestock truckers are also exempted from that order until November 30.¹

September 9, orders requiring that all trucks be covered by Certificates of War Necessity; these certificates among other things will show the allotted amount of gasoline and will be subject to modification or cancellation by ODT at any time.

October 16, memorandum providing for the setting up of Industry

¹The exemptions are still in effect on Jan. 28, 1943. Inability to get adequate rations of gasoline may have forced some truck operators to curtail mileage.

²We understand that ODT personnel, as well as personnel of the Joint Information offices, look at trucking operations largely from the standpoint of the big trucking outfits, the intercity truckers; that few of them have understood the operation of livestock trucking or its problems. Some of our livestock traffic men have rendered outstanding service in this situation.

Transportation Committees. In this memorandum, ODT recognizes for the first time—officially—that research men of the agricultural colleges and experiment stations are in a position to render valuable aid in dealing with the transportation emergency.

An important development was WPB Directive 11, dated October 20, in which the Secretary of Agriculture was given power to direct livestock marketing, given “. . . control of sales, movement, and disposition . . .” The purpose is apparently to enable the Secretary to require livestock to move under permits for shipment in case of severe market congestion.

Producers vitally interested. Livestock producers are vitally interested in any changes in the transportation setup. It appears that under cover of the war emergency, powerful interests seek to reshape the nation's livestock marketing. It has been urged that (1) all livestock should be required to be sold at the nearest packing plant or market; (2) a limit should be placed on all livestock trucking, say 50 or 75 miles.

In that connection, we are informed that under the auspices of the War Production Board a meeting was held in Washington on October 13-14 to discuss livestock trucking; that those invited were packers, largely packers buying direct; that no representatives of livestock producers or of livestock markets were invited to the meeting. One representative of the livestock markets attended the meeting by accident. Otherwise producers probably would have heard nothing about it.

Representatives of the public livestock markets, of the National Livestock Marketing Association, and of other farmers' marketing agencies have spent much time and much money in attending hearings in Washington (not only as to transportation, but as to price ceilings, rationing, and other vital matters) in efforts to safeguard producers' interests.

Two Illinois publications. The tire situation as to livestock trucks was reported in a recent publication, “Market and Return Loads Hauled by Livestock Trucks in Illinois.”

In a second recent publication, “Tire-Use Expectancy of Trucks Hauling Farm Products, Illinois, 1942,” Table 1, page 16, we stated that 63 percent of the tires on 1,176 commercial trucks were expected to be worn out within 12 months from the time the surveys were taken.

There can be no question as to the necessity and importance of tire and truck conservation in our war program—it is a patriotic duty of all stockmen and of all truckers.

As stated above, federal agencies can inform as to facts of the situation, can make suggestions as to what should be done, and can issue orders. How successfully their suggestions and orders are carried out will depend upon local understanding, initiative, and cooperation.

R. C. ASHBY

THE ILLINOIS FATHER-SON FARM BUSINESS AGREEMENT

The Illinois father-son farm business agreement is based on the son sharing the returns from the entire farm business. After a boy, as a 4-H club member, has experienced the ownership of one or more animals or a crop, many fathers wisely lead their sons to develop a specific interest in farming by giving them a share in the entire farm business, even though the son's principal contribution to the farm business is his own labor.

The agreement may be drawn to enable the son to retain possession of a limited amount of property required to meet 4-H requirements. A fair value may then be placed on all the other property which the boy owns for which he is given a note representing a fair value, bearing the going rate of interest, until such time as the son wishes to begin farming for himself or wishes his money for some other purpose. In effect the father buys the son's interest in any property with the thought that the son then transfers his personal interest to the entire farm business. An interest in the entire farm business gives the son an opportunity to assume responsibility as his knowledge, experience, and capital accumulate as well as to develop an interest in farming. Furthermore, the agreement makes for continuity of ownership and operation of the same farm in the same family from generation to generation, and thus contributes to the stability, permanence, and wholesomeness of farm and community life.

The attainment of financial interests and the assumption of responsibilities at an early age are important. Therefore, fathers will find it advantageous to form partnerships with their sons while their sons are still in their "teen" years. The son's share may be small at first, but it would gradually increase as his labor and other contributions became more valuable.

Conditions Essential to a Satisfactory Agreement

1. The farming operations must be organized to give a business of sufficient size to furnish profitable employment for both father and son. Better farming methods, more livestock and new enterprises, as well as more acres, may be used to increase the size of the farm income. A few of the most profitable father-son partnerships are on 140- to 160-acre farms which are intensively developed.

2. Father and son should share in the net earnings in proportion to their contributions. If the son furnishes only labor and the father furnishes both labor and capital, the son's share will be much less than his father's. This develops in the son an appreciation of the contributions necessary to the development of a successful farm business.

3. The division of expenses and income should be based on well-kept

farm records, which include inventories, cash receipts, and cash expenses. The Illinois farm account book, available at the College of Agriculture, fills these needs. A complete settlement may be made at the end of each year. While it is frequently more convenient to divide the net cash income and not consider the change in income represented in the changes in inventories until the partnership has run for several years, some difficulty may be experienced, especially if there is a marked reduction in the number of livestock produced or in their value. Some of these difficulties are avoided if similar values are used at the beginning and end of year for the same grades of breeding animals. The value of all purchased property should be based on cost.

4. The son should receive a guaranteed wage or income during the year. When settlement is made at the year's end, the payments which were made during the year will be deducted from the son's share of the net farm earnings which should represent his relative contribution to the business.

5. Satisfactory living arrangements should be made for the son and his family, in the case of a married son. Living quarters for two families have been provided in some instances by dividing a large house into two apartments, by renting a nearby house, or by building a new home for either the father or son.

6. When a son receives a share of the farm income, the father and son will make separate income tax returns when the son is past 21 years of age, but if the son is not of age the father should report the entire income unless the son is emancipated. That is, if the son receives a definite share of the income and has his own account, the father may declare him as independent as if he were in business for himself. A written agreement is desirable as evidence of the relationship between father and son in addition to the general advantages of definite agreements.

How to Make the Agreement

Time of year. The most suitable time of the year for starting a partnership is about January 1 when most farm account records are started. The record may then be used to study the farm business and to make out income tax reports as well as to calculate the division of farm returns between father and son at the end of the year.

Inventory. The father and son should agree on what appears to be a fair value for all property which is to be used in the farm business. It is recommended that if either extremely high or low prices exist at the time the agreement is entered into, conservative valuations be used.

Suggestions, directions, and forms for taking a farm inventory may be found in the Illinois farm account book.

Contributions. Since the division of farm returns is in proportion to the value of the capital and labor contributions of each party, these items must be valued prior to filling out the agreement. The value of the capital is measured by a fair rate of interest on the amount of capital invested by each. The labor of each is valued at what it would cost to hire such labor. Other items do not need to be considered in calculating the division of returns between the father and son because they are charged to the farm account. There may be an occasional instance where the father has established a considerable reputation as a purebred livestock breeder or as a seed producer which has a value in addition to his labor value.

In arriving at the proper rate of interest, one should consider: (a) prevailing interest rates for farm real estate and for operating capital; and (b) the rate of interest which might be expected from alternative uses. Likewise, the labor rate should be varied according to the common wage rate in the community. The proportion of full time that each gives to the business should be recognized.

Example. A method for arriving at an equitable division of net farm earnings between father and son is given in the following example:

	Amount	Rate	Contributions		
			Father	Son	Total
<i>Father's</i>					
Land and improvements.....	\$21 000	4%	\$ 840	...	\$ 840
Operating capital.....	5 100	5%	255	...	255
Labor.....	12 mo.	\$50	600	...	600
<i>Son's</i>					
Labor.....	12 mo.	\$50	...	\$600	600
Total.....	....	..	1 695	600	2 295
Percent of total.....	....	..	74	26	100

The father contributes capital invested in land and improvements having an annual value of \$840, operating capital of \$255, and labor valued at \$600, totaling in all \$1,695 or 74 percent of all contributions. The son, on the other hand, contributes only labor valued at \$600 or 26 percent of all contributions. Since the father and son share in the net farm income in proportion to their relative contributions, the father should receive 74 percent and the son 26 percent. It will be recognized that the

farm expenses are paid before the net income is divided between the father and son.

Guaranteed wage. According to the plan the son will receive a guaranteed wage advance throughout the year. In deciding on the son's guaranteed labor allowance, consideration should be given to: (a) expected earnings; (b) living expenses; and (c) differences in amount of farm produce used in the household by the father and son.

In years of low farm income, it will be necessary to reduce the labor allowance as much as possible. Payment should be made monthly.

If the son continues to live with his parents and gets a substantial wage allowance which is in excess to that ordinarily paid a single hired man, he may reasonably be expected to pay for his share of the cash cost of food, fuel, and laundry.

Making Settlement

Settlement is made at the end of each year and not at the time of each purchase or sale. The father owns the farm bank account and settles with the son. The son, however, may have his own personal bank account restricted to the amounts paid him.

All farm income and expense items are included in the farm account record. Father and son then share in proportion to their contributions in selected receipts and net increases less selected expenses and net decreases, as shown on pages 44 and 45 of the Illinois farm account book at the end of the year. Example:

Receipts and net increases			Expenses and net decreases		
Page 44 Line	Item	Value	Page 45 Line	Item	Value
14	Cattle.....	\$ 488	1	Land improvements...	\$ 76
16	Dairy sales.....	764	2	Buildings.....	112
17	Hogs.....	1 646	3	Horses.....	25
20	Poultry.....	26	6	Livestock.....	147
21	Eggs.....	392	8	Machinery.....	632
23	Feed.....	859	10	Hired labor	
24	AAA.....	243		(less son's labor)....	95
			11	Taxes.....	210
			12	Miscellaneous.....	18
	Total.....	\$4 418		Total.....	\$1 315
	Less.....	1 315			
Net farm returns \$3 103 \times 74% = \$2 296—father's share Net farm returns \$3 103 \times 26% = 807—son's share Less monthly labor allowance (\$50)..... \$600 Cash settlement at end of year to son..... 207					

In the foregoing examples, an equitable division of net farm earnings is determined by using the method illustrated on page 4. The division is 74 percent or \$2,296 to the father, and 26 percent or \$807 to the son. Since the son has already received a monthly labor allowance of \$50 a month or \$600 during the year, the \$600 is deducted from the \$807, leaving \$207 due the son at the end of the year. As far as the final answer is concerned, it makes no difference whether the father and son share expenses in proportion to their share in the business as they occur or whether all expenses are paid from a farm bank account and the net income is divided; the latter is the more simple method of handling the business. In comparing his income from the farm with what he might have received in other employment, the son should add to his cash income a fair value for his board, room and other perquisites received on the farm.

After the annual settlement is made, the father is full owner of all property on hand which he had at the beginning of the year plus increases or decreases in inventory. The son's accumulation of cash may be invested in war savings bonds or other securities until the son needs the money to start farming for himself.

A special discussion has been prepared for farm operators who wish to develop a profit-sharing plan for labor. For further discussion of father-son agreements and farm leases see Illinois Circular 503.

H. C. M. CASE

J. B. CUNNINGHAM

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Dept. of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ⁹Survey of Current Business, December, 1942 and subsequent monthly issues, unadjusted for seasonal variation. Prior to 1939, "factory payroll" index, with 1923-25 base, multiplied by 1.087 to obtain the "Weekly Wages" index with 1939 base. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk

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UNITED STATES DEPARTMENT OF AGRICULTURE
Cooperative Agricultural Extension
Work—Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ^a	Weekly wages, all manufacturing industries, unadjusted ^b	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period..	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1939	1935-39
1929.....	95	105	104	99	103	103	104	110	120	110
1930.....	86	88	89	94	83	87	93	100	98	91
1931.....	73	65	62	80	58	58	72	84	74	75
1932.....	65	48	41	69	43	43	62	66	51	58
1933.....	66	51	45	71	49	51	72	62	54	69
1934.....	75	65	61	80	57	55	69	72	70	75
1935.....	80	79	82	81	64	65	80	78	80	87
1936.....	81	81	86	80	74	82	103	89	93	103
1937.....	86	86	96	84	80	87	103	98	111	113
1938.....	79	69	69	80	72	81	101	92	85	89
1939.....	77	65	65	78	72	81	97	99	100	108
1940.....	78	68	69	79	78	90	113	106	114	123
1941.....	87	82	87	85	101	116	136	129	162	155
1941 Dec....	94	95	99	92	134	162	176	139	185	167
1942 Jan....	96	100	104	94	132	146	155	143	189	171
Feb....	97	101	106	95	127	134	141	147	193	172
Mar....	98	103	108	97	127	154	159	146	199	171
Apr....	99	104	111	98	136	143	146	150	204	173
May....	99	104	112	99	130	144	145	155	210	174
June....	99	104	110	99	131	149	151	159	215	176
July....	99	105	111	99	132	125	126	157	222	180
Aug....	99	106	115	99	143	128	130	161	234	183
Sept....	100	108	114	99	146	138	140	170	273	185
Oct....	100	109	116	100	152	259	259	180	284	188
Nov....	100 ¹¹	111 ¹¹	115	100	161 ¹¹	...	...	...	...	194
Dec....	101 ¹¹	112 ¹¹	118 ¹¹	100	...	...	...	...	...	196 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			December 1941	Current months		
	1924-29	1941	1942 ¹¹		October	November	December
Corn, bu.	\$.81	\$.63	\$.77	\$.66	\$.73	\$.73	\$.80
Oats, bu.	.42	.36	.48	.47	.44	.45	.49
Wheat, bu.	1.30	.93	1.13	1.14	1.15	1.16	1.24
Barley, bu.	.66	.55	.74	.70	.75	.75	.80
Soybeans, bu.	1.94	1.24	1.65	1.48	1.59	1.59	1.59
Hogs, cwt.	9.97	9.37	13.37	10.70	14.40	13.60	13.40
Beef cattle, cwt.	8.57	10.07	11.93	10.80	12.50	12.50	12.50
Lambs, cwt.	12.22	9.85	12.28	10.60	12.60	13.20	13.70
Milk cows, head	78.00	80.00	102.00	91.00	105.00	110.00	120.00
Veal calves, cwt.	11.27	11.19	13.63	12.40	14.00	14.00	14.00
Sheep, cwt.	6.52	4.43	5.50	4.80	4.90	5.30	6.00
Butterfat, lb.	.42	.33	.39	.34	.45	.46	.47
Milk, cwt.	2.32	2.05	2.40	2.50	2.65	2.70	2.80
Eggs, doz.	.30	.22	.29	.32	.32	.34	.34
Chickens, lb.	.21	.15	.19	.15	.19	.19	.20
Wood, lb.	.36	.37	.40	.40	.41	.40	.40
Apples, bu.	1.59	1.07	1.53	1.30	1.30	1.50	1.75
Apples, ton	13.88	8.49	11.33	11.40	10.80	11.50	11.90
Potatoes, bu.	1.39	.82	1.32	.95	1.20	1.20	1.25

¹¹ For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

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SUGGESTIONS FOR A WAR-WINNING FARM PROGRAM FROM EXPERIENCES OF ILLINOIS FARMERS

That the seemingly impossible task of producing more with less can be done is evident from a study of records kept by farmers enrolled in the Farm Bureau Farm Management Service during the past six years who have accomplished, as a matter of good business, more than the seemingly impossible increases called for in 1943.

During recent three-year periods, 10 percent of 535 cooperators in the Farm Bureau Farm Management Service have produced 28 percent more saleable products per acre per year than the average cooperators. Compared with all farms having the same crop acreage and the same numbers of livestock, they accomplished this high production from land and feed with labor costs 13 percent less than the average for all the farms and with power and machinery costs 26 percent less than the average. That their efficiency paid them well is shown by the fact that their net farm earnings were approximately \$6.00 per acre per year above the average earnings of all cooperators.

Most of the success of these efficient farmers who have accomplished the seemingly impossible task as a matter of good business was due to their following certain simple practices, a few of which are listed below.

High acre yields of essential and high-feed-value crops are of first importance. The most essential corn-belt crops are corn, small grain, hay and pasture for feed, soybeans for oil and protein concentrates and in

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

certain selected areas, hemp for fiber. Corn and alfalfa produce 50 to 100 percent more digestible feed per acre than oats, barley, wheat, clover, or timothy.

1. *First-year corn is always planted on alfalfa or clover land* by those who obtain the highest average yield of all corn grown over a period of several years. This leads to the conclusion that if the necessarily high yields of corn are to be maintained in 1944, 1945, and 1946 as well as in 1943, enough clover and alfalfa should be seeded in 1943 and 1944 to provide clover ground for corn the following years. Spreading limestone and phosphate during 1943 in order to insure clover and alfalfa in 1944 and 1945 appears to be a wise wartime practice on the part of those whose land needs them and who are able to obtain them.

2. *In addition to being planted on clover ground, first-year corn is always planted on well-manured ground* by those who obtained the highest average yield of all corn grown over a period of several years. On such farms, at least part of the second-year corn is usually covered with manure during the winter and spring. One of the simple things every corn-belt farmer can do to increase 1943 production is to haul out all of the manure that he can scrape up from the hen house, barns, feeding floors and feed lots, and to spread it on the corn ground. Where there is not enough manure to cover all of the corn ground, total production will be increased more if the manure is spread thinly rather than thickly on the less productive corn land.

3. Only seeds of known high-yielding strains of corn, oats, wheat, barley, and soybeans are used by farmers who get the highest yields. They order seeds early in order to insure a good choice.

4. Most corn and bean ground is worked early in spring by those who get the highest yields. Fall-plowed ground is harrowed or disked as soon as the soil is fit to work. Spring-plowed stalk or bean stubble ground is disked as soon as it is fit to work and is then plowed as soon as possible.

5. The best grain growers harrow most spring-plowed ground immediately after plowing. They usually do this by attaching a section of harrow behind the plow, although some good corn growers prefer to wait a few hours after plowing before following up with the harrow.

6. The best corn growers are very particular about protecting the corn plants during cultivation. They never send a boy or hired man with a harrow, weeder, rotary hoe, or cultivator alone to the field; they go with the boy or hired man and follow the implement around two or three times to make sure that it is not damaging the young corn plants. If corn is to be cross-cultivated, it is imperative that the planter be adjusted so that it will do a perfect job of checking.

7. Sloping land subject to serious erosion, when worked, is worked on the contour, and grass waterways are left in all hollows where water runs after heavy rains.

High returns from feed fed to livestock are also of first importance. A few of the more important practices which are almost always followed by farmers who secure the highest returns from feed fed to livestock and which can be followed by nearly every livestock producer follow:

1. Well-balanced rations are fed to all classes of livestock by successful producers and feeders. These men make full use of legume hay and pasture and practice liberal feeding of protein supplements.

2. An abundant supply of pure water is provided for all livestock by the most successful livestock producers and feeders at all times, and it is warmed in winter.

3. The good health of all animals is considered essential by the most successful livestock producers, and sanitation is universally recognized by them as being necessary for good animal health. If their example is followed, every pig farrowed during the spring of 1943 will be farrowed in an individual house or pen that has been thoroughly scraped with a hoe or shovel, scrubbed with boiling lye water and well bedded with clean straw; the sow will be cleaned before she is placed in the clean pen; and the pigs will not be allowed to run in old lots, but will be farrowed out in a clean field or will be hauled to a clean field at an early age. Most of the more successful pork producers castrate pigs when they are from one to two weeks old and vaccinate them when they are from five to six weeks old.

The successful poultry producers are extremely particular about thoroughly cleaning brooder houses, moving brooder houses to clean ground where poultry has not been kept for one or more years, and cleaning and disinfecting the laying houses periodically.

Many other health measures are studied and followed by the most successful livestock producers.

4. Particular attention to the general care of all animals is given by those livestock producers who get the best returns for feed fed. The particularly *gentle* handling of all pregnant females and of all young animals is a necessary part of their care. The *regular* feeding, watering, milking, and other care of all animals is also essential. Successful producers look after the *comfort* of their animals by providing warm houses, windbreaks, shelter from storms, shade in pasture, dry bedding, and freedom from dust and foul air.

It is the comfortable, healthy, well-fed, gently handled and regularly

cared-for animal that will help most to win the war and make money for its owner.

Securing maximum production with minimum labor, power and machinery is likewise of first importance. Those who have produced more than average yields and more than average returns from feed fed to livestock with less than average labor and power and machinery costs plan their work carefully.

1. Some of them make lists of all jobs that must be done with machinery and equipment, with crop production, and with livestock production. Such lists are numbered in the order that they should be done, and each job is marked off the list when it is completed.

2. During the winter, machines and livestock equipment are overhauled and made ready for use, machines are repaired and cutting edges are sharpened. Farrowing pens and brooder houses are cleaned and prepared for use and feeders and waterers are cleaned and put in order.

3. Well ahead of the planting season seeds are purchased and home-produced seeds are cleaned and prepared for planting.

4. Livestock and crop programs are planned so that peak loads of labor do not overlap. Pigs are farrowed well before oats sowing or after corn planting; chicks are bought between oats sowing and corn planting, and cows are freshened in the fall and lambs dropped in winter.

5. Necessary feeds are purchased or prepared well in advance of their use and at a time that will not interfere with getting field work done on time and so that all livestock will have proper feed at all times.

6. Livestock production is adjusted to the available labor. On many farms where the operator is able-bodied and where there are boys under 18 years of age and strong girls, more cows can be milked, more pigs raised, more poultry kept, and more cattle fed without hiring any additional labor.

It is a self-evident fact that if livestock production is to be increased without a material increase in feed production, *most of the livestock must be fed and handled by experienced feeders and dairymen.* Therefore, it is the patriotic duty of experienced livestock producers to "carry on for the duration" to the best of their ability, even though it requires the use of inexperienced and unsatisfactory labor.

It is also an absolutely essential duty of those in authority to see that every experienced livestock producer is provided with the necessary labor and protein supplements and machines with which to carry on.

7. Neighborhood cooperation in the use of labor and machines is practiced by many who do their work most economically and efficiently.

8. Some efficient producers hire workers to perform certain jobs that others do for themselves, such as overhauling tractors and other machines, repairing buildings and fences, castrating and vaccinating pigs, and doing some ordinary field work. Many small farm operators may render a great wartime service by working part time doing these special jobs on neighboring farms.

9. Farmers who get the most work done by hired labor provide satisfactory conditions for their men, and for their families in case the men are married. They pay good wages and many pay bonuses in addition to good wages. They provide good living conditions and some recreation.

10. Farm operators who accomplish most with limited labor are ever watchful to find and use practical labor-saving methods and devices. They plan to avoid overlapping peaks of labor; they perform at the most opportune times important jobs, such as castrating pigs and calves and vaccinating pigs when they are small and working land when it is in the proper condition to prevent clods and to kill weeds. Their equipment is ready, and odd jobs are done ahead of peak loads of labor with crops and livestock; they handle manure only once, hauling it directly to the field from the stable or feeding floor; they load machines to capacity; they use large self-feeders and waterers, and they feed cattle and hogs on pasture. Their barns and feeding plants are so arranged that cattle, hogs, and sheep are fed and watered with the minimum of hand work required to handle feed.

M. L. MOSHER

REPLACEMENT RATE OF TIRES FOR TRUCKS HAULING FARM PRODUCTS

The following article is based upon data collected in surveys covering the use and condition of tires on trucks hauling farm commodities in Douglas and Henderson Counties, Illinois, in October, 1942.¹ The sample of trucks in these surveys was estimated to include 90 percent of all commercial trucks hauling farm products and 25 percent of all farm trucks in Douglas County; and 100 percent of all commercial and 70 percent of all farm trucks in Henderson County.

Trucks varied in size from ½-ton pickup trucks used locally to 10-wheel semi-trailer trucks used primarily for long-haul trucking to central markets.

¹Reports on each county study have been mimeographed by the Department of Agricultural Economics, Agricultural Experiment Station, University of Illinois, and are available for general distribution.

Total miles driven by these trucks during the 12 months previous to the survey varied from less than 10,000 to over 80,000 for commercial trucks; and from less than 5,000 to over 25,000 for farm trucks. Between two-thirds and three-fourths of all the commercial trucks in both counties traveled over 20,000 miles, and over 20 percent traveled over 50,000 miles during the previous year. Three-fourths of all farm trucks in both counties traveled less than 10,000 miles, and more than one-third traveled less than 5,000 miles during this period.

Tire replacement rate. If it can be assumed that the pattern of truck use during the past 12 months will be maintained, i.e., the size of loads hauled, the number of miles driven, the kinds of road traveled, etc., will be essentially the same during the next two years as in the past year, how many tires will be necessary for replacements on trucks during the next 24-month period? Reduced driving speed, probable changes in the quality of tire replacements, more extensive use of recapped tires, etc., may affect the rate of replacement but have not been considered in this analysis.¹

The number of miles driven per year and the estimated miles of use in a new truck tire² was used as a basis for the calculation of the replacement rate. Only regular or on-the-road tires were considered in this analysis. In the main, spare tires were considered only good enough to get the truck in if one of the regular tires were to blow out; some trucks did not even carry spares.

In the Douglas County study it was found that to maintain 100 truck tires in continuous service for 24 months on commercial trucks would require 42 tires for the first 6 months, 46 for the next, and 44 for each of the following 6-month periods, or a total of 176 tires. Farm trucks would need 10, 12, 14, and 18 replacements for these respective periods, or a total of 54 tires. These two classes combined would need a replacement rate of 20, 22, 23, and 26 tires for the 6-month period, or a total of 91 tires.

The rate of tire replacement needed in Henderson County was calculated on the same basis as for Douglas County. The replacement rate on commercial tires would be 45, 49, 42, and 53 for each 6-month period, or a total of 189 tires; farm trucks would need 18, 27, 31, and 16 tire

¹The average mileage expected from recapped tires was estimated by truckers to be equal to about one-half that of a new tire if used on the front wheels of a standard, or the trailer of a semi-trailer truck. Recapped tires on the drive wheels of commercial trucks were found very unsatisfactory.

²Truckers estimated that on the average a new tire would run 40,000 miles on commercial, and 30,000 miles on farm trucks. These are average figures with considerable variation in the range of estimates.

replacements, or a total of 92. Combined, the tires needed would be 23, 30, 33, and 24, or a total of 110 tires.

The similarity between the tire replacement rates for the two counties, although they are widely separated, would indicate that these rates could be applied over wider areas.

The real question is: can these tires be replaced? It is the apparent intention of the government to keep needed trucks in essential use, provided they are operated so as to get maximum use of tires. Whether this can be done apparently depends on how rapidly the synthetic rubber plants can be gotten into operation. Current plans call for construction of plants which will produce 800,000 to 1,000,000 tons annually. This production of synthetic rubber, however, is just getting started and will take at least a year or more to reach full production. In the meantime all rubber-tired vehicles should be used with the greatest of care so as to get the greatest possible use out of our present tires.

B. D. PARRISH and R. C. ASHBY

METHODS OF PAYING FARM WORKERS

This discussion is a sequel to the article entitled, "The Illinois Father-Son Farm Business Agreement" which was published in the January, 1943, *Illinois Farm Economics*.

Many farmers are willing for hired labor to participate in increased farm income, but they hesitate to make definite agreements because of the uncertainty of future income. It is always easy to raise wages, but difficult to lower them when conditions change.

How can labor participate in the increased earnings on farms at the present time? There are two methods that should be considered: A cash-bonus plan and a profit-sharing plan.

For the farmer, the *cash-bonus* plan involves the payment of a going wage rate and, in addition, a cash bonus to the hired man who remains on the farm throughout the year. The cash bonus may be based upon production or sales of one or more products as, for example, a payment to the hired man of \$1 for every pig raised to market weight; \$.50 for every 100 pounds of pork and beef produced; \$.10 for every 100 pounds of milk sold or \$.03 for each bushel of grain produced, or on production above an agreed minimum. These suggested bonus plans have the disadvantage of not being self-adjusting to changes in income due to price changes. A bonus may be on a percentage of the gross income as 3 to 6 percent of sales of dairy products.

The *profit-sharing* plan has a definite advantage of being based upon the net earnings of the farm, thus inducing full cooperation of labor to help keep costs low as well as to attain a large income. The following discussion explains essential conditions and possible procedures if the profit-sharing plan is to be used most satisfactorily.

The Profit-Sharing Plan

The profit-sharing plan is adapted to three situations:

First, the man who recognizes that his farm earnings are high and that his hired man may be tempted to accept the high wages paid in industry. He is willing that labor share in the increased earnings when labor carries part of the responsibility, but he hesitates to increase wages because of uncertain future income.

Second, a father who relies heavily on one or more of his sons to carry on the farm work. The principles involved in a father-son farm business agreement were discussed in the January, 1943, *Illinois Farm Economics*. The contract form for such an agreement may be procured from this Department.

Third, a man of advanced years or the absentee city landlord who wants to transfer some of the responsibility of operating the farm to a trusted hired man or to a neighbor's son under a manager-operator agreement; this is discussed in Illinois Circular 503.

Conditions Essential to a Satisfactory Profit-Sharing Agreement

1. *Confidence is essence of plan.* There must be a clear understanding, preferably in writing, between the owner or farmer and his hired labor with regard to the percent of net farm income that is to go to hired labor, and the method of computing net farm earnings. If the owner or farmer has misgivings about divulging his earnings, about labor's confidence in his managerial ability, or labor's accepting his accounting methods, he should not enter into a profit-sharing agreement.

2. *Size and efficiency.* The business must be sufficiently large and the management reasonably efficient to furnish profitable employment. Better methods, more livestock, new enterprises, or more acres, may be used to increase the farm income.

3. *Share based on contributions.* Hired labor shares in the net earnings proportionately. If the hired man furnishes only labor and the operator furnishes land, capital, buildings, taxes, his own and family labor, and management, the hired man's share obviously will be much less than the operator's share.

4. *Records indispensable.* Labor's share of the net income must be based on well-kept records. The "Illinois Farm Account Book" fills this need. A settlement should be made at the end of each year.

5. *Guaranteed wage.* The hired man receives a conservative guaranteed monthly wage, and, in addition, at the end of the year the difference between the guaranteed wage and the agreed share of the net farm income.

6. *Living from farm.* Satisfactory living quarters and agreed upon amounts of meat, milk, and other farm produced items should be furnished from the farm.

How to Make the Profit-Sharing Agreement

Time of year. The agreement may start on any date, but be based on the farm account with labor sharing in proportion to the time employed.

Contributions. The contributions toward the successful operation of a farm should be taken into account. On owner-operated farms in addition to the value of hired labor, the following should be included: interest on the capital invested, maintenance and depreciation of land improvements and buildings, real estate taxes, family labor, operator's labor and management. For a tenant operator, include the above items except interest on capital invested in the farm, maintenance and depreciation of land improvements and buildings, and real estate taxes.

In determining the interest rates to be allowed for capital in the business, one should consider: (1) prevailing interest rates for capital invested in farm real estate and operating capital and (2) the return from alternative investments.

In addition to fencing, maintenance and depreciation of land improvements depends largely upon the use of limestone and rock phosphate which have a long-time value. Building maintenance and depreciation usually vary from \$1 to \$2 per acre depending upon the size of the farm and type of farming.

Real estate taxes should be based on actual tax payments.

Estimate all labor whether family, hired, or operator's in months of labor valued at hired labor rates.

Management is difficult to evaluate. A charge of 1 percent on the total capital invested seems to be conservative. Where the laborer is also the manager of the farm, this allowance should go to labor. Under purebred livestock breeding or seed production, it may be fair to allow a larger return to management. Past farm records will be helpful in valuing the contributions.

Example. A method follows for computing the percentage that hired labor's contribution is of the total contributions for a farm, whether operated by the owner or a tenant:

Item	Amount	Rate	Contributions	
			Owner Operated	Tenant Operated
Capital—Land and buildings.....	\$35,000	4%	\$1,400	....
Operating.....	8,000	5%	400	\$400
Land improvements.....	....	....	250	50
Buildings—Maintenance and depreciation....	....	....	350	....
Taxes—Real estate.....	....	....	425	....
Labor—Operator and family.....	14 mo.	\$60	840	840
Hired.....	12 mo.	60	720	720
Management—Total capital.....	43,000	1%	430	430
Total.....			\$4,815	\$2,440
Percent that hired labor is of total			15.0	29.5

The hired labor valued at \$720 is 15.0 percent of all contributions when the farm is owner operated and 29.5 percent if tenant operated. These percentages represent hired labor's share of the net farm income adjusted for profit sharing.

How to determine earnings. In determining earnings, changes in the amounts and values of livestock and marketable products included in the inventory must be taken into consideration.

A satisfactory method of determining net farm earnings with breeding herds and flocks is to place conservative values on cows, heifers, bulls, ewes, etc., and to maintain such values from year to year regardless of market fluctuations. Prices paid may be the basis for valuing livestock purchased. If the usefulness of breeding animals is impaired by sickness, unsoundness, or old age, the values may be adjusted. Hogs, feeding cattle, and discarded breeding stock are valued at market prices less sales expenses. This method is recommended for all accounting purposes, and is most useful for income tax reporting on the accrual basis.

Making Settlement

All farm income and expense items are included in the farm account record. Hired labor then shares in proportion to his contributions in selected receipts and net increases less selected expenses and net decreases, as shown on pages 44 and 45 of the "Illinois Farm Account Book." Use figures in column 1 if the farm is owner operated and in column 2 if tenant operated.

Examples

Expenses and Net Decreases ^a				Receipts and Net Increases			
Page 45 Line	Item	Owner operated	Tenant operated	Page 44 Line	Item	Owner operated	Tenant operated
3	Horses.....	\$ 25	\$ 25	14	Cattle.....	\$2,203	\$2,203
6	Livestock expense.....	48	48	16	Dairy sales.....	125	125
8	Machinery.....	1,200	1,200	17	Hogs.....	2,958	2,958
9	Automobile (farm share).....	96	96	20	Poultry.....	127	127
11	Taxes (operating capital).....	90	75	21	Eggs.....	440	440
12	Miscellaneous.....	60	40	23	Crops.....	3,300	35
13	Cash rent.....	...	475	24	AAA.....	403	201
	Total.....	\$1,519	\$1,959			\$9,556	\$6,089
	Less selected expenses and net decreases.....					1,519	1,959
	Net earnings adjusted for profit sharing.....					\$8,037	\$4,130
	Percent to labor.....					15.0	29.6
	Hired labor's share.....					\$1,205	\$1,218
	Less monthly wage.....					720	720
	Cash settlement at end of year.....					\$ 485	\$ 498

^aExclusive of items which are used in computing labor's contribution, which include land improvements, maintenance and depreciation on buildings, real estate taxes, all labor and management, and an allowance for interest on the investment.

In the foregoing examples, for the same farm, hired labor's share, if owner operated is 15.0 percent or \$1,205; and if tenant operated, 29.5 percent or \$1,218. Since hired labor has already received a monthly wage of \$60 a month or \$720 for the year, the \$720 is deducted from the hired man's share of the net farm earnings, leaving \$485 and \$498 additional income respectively due hired labor.

Profit-sharing arrangements automatically take care of rapid increases in farm earnings as well as pronounced drops when prices recede. Such a plan makes adjustments promptly as farm income changes. To adjust wages on this basis will help farmers to compete with industry. One reason why so many desirable workers have left farms is because farm wages have been adjusted so slowly. Finally, a profit-sharing plan should enlist the full cooperation of labor in attaining maximum war production of farm products. H. C. M. CASE and J. B. CUNNINGHAM

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Department of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. ⁷Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁸Obtained by dividing Index of Illinois Farm Income (Column 6) by Index of Prices Paid by Farmers (column 4). ⁹For 1929-1940 inclusive from Poultry and Egg Situation, September, 1941, p. 25; currently, adjusted for seasonal variation, beginning with October, 1941, issue. ¹⁰Survey of Current Business, December, 1942 and subsequent monthly issues, unadjusted for seasonal variation. ¹¹Prior to 1939, "factory payroll" index, with 1923-25 base, multiplied by 1.087 to obtain the "Weekly Wages" index with 1939 base. ¹²Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹³Preliminary estimate. ¹⁴Illinois Crop and Livestock Statistics, Cir. 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk
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UNITED STATES COOPERATIVE AGRICULTURAL EXTENSION
WORK ACTS OF MAY 8 AND JUNE 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Weekly wages, all manufacturing industries, unadjusted ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period..	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1939	1935-39
1929.....	95	105	104	99	103	103	104	110	120	110
1930.....	86	88	89	94	83	87	93	100	98	91
1931.....	73	65	62	80	58	58	72	84	74	75
1932.....	65	48	41	69	43	43	62	66	51	58
1933.....	66	51	45	71	49	51	72	62	54	69
1934.....	75	65	61	80	57	55	69	72	70	75
1935.....	80	79	82	81	64	65	80	78	80	87
1936.....	81	81	86	80	74	82	103	89	93	103
1937.....	86	86	96	84	80	87	103	98	111	113
1938.....	79	69	69	80	72	81	101	92	85	89
1939.....	77	65	65	78	72	81	97	99	100	108
1940.....	78	68	69	79	78	90	113	106	114	123
1941.....	87	82	87	85	101	116	135	129	165	156
1942 Jan....	96	100	104	94	132	146	155	143	196	172
Feb.....	97	101	106	95	127	134	141	147	203	172
Mar.....	98	103	108	97	127	154	159	146	209	172
Apr.....	99	104	111	98	136	143	146	150	215	174
May.....	99	104	112	99	130	144	145	155	221	175
June....	99	104	110	99	131	149	150	159	226	176
July....	99	105	111	99	132	125	126	157	234	179
Aug....	99	106	115	99	146	128	129	161	246	183
Sept....	100	108	114	99	148	138	139	170	252	186
Oct....	100	109	116	100	151	259	259	180	261	189
Nov....	100	110	115	101 ¹¹	160	191	191	188	271	192
Dec....	101 ¹¹	113 ¹¹	118 ¹¹	102 ¹¹	164 ¹¹	...	...	...	279 ¹¹	197
1943 Jan....	102 ¹¹	117 ¹¹	124 ¹¹	104 ¹¹	...	...	...	...	...	200 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			February 1942	Current months		
	1924-29	1941	1942 ¹¹		December	January	February
Corn, bu.	\$.81	\$.63	\$.77	\$.74	\$.80	\$.88	\$.89
Oats, bu. ....	.42	.36	.48	.53	.49	.54	.56
Wheat, bu.	1.30	.93	1.13	1.17	1.24	1.33	1.35
Barley, bu. ....	.66	.55	.74	.77	.80	.85	.85
Soybeans, bu.	1.94	1.24	1.65	1.80	1.59	1.60	1.60
Hogs, cwt.	9.97	9.37	13.37	12.20	13.40	14.15	14.90
Beef cattle, cwt.	8.57	10.07	11.93	11.10	12.50	12.70	13.40
Lambs, cwt.	12.22	9.85	12.28	11.00	13.70	14.00	14.20
Milk cows, head....	78.00	80.00	102.00	100.00	120.00	120.00	126.00
Veal calves, cwt.	11.27	11.19	13.63	13.10	14.00	14.40	14.90
Sheep, cwt.	6.52	4.43	5.50	5.30	6.00	6.00	6.60
Butterfat, lb. ....	.42	.33	.39	.34	.47	.47	.48
Milk, cwt.	2.32	2.05	2.40	2.40	2.80	2.90	2.85 ¹¹
Eggs, doz. ....	.30	.22	.29	.26	.34	.34	.32
Chickens, lb. ....	.21	.15	.19	.18	.20	.22	.23
Wool, lb. ....	.36	.37	.40	.40	.40	.40	.40
Apples, bu.	1.59	1.07	1.53	1.35	1.75	2.00	2.00
Hay, ton	13.88	8.49	11.33	12.50	11.90	12.70	13.60
Potatoes, bu.	1.39	.82	1.32	1.25	1.25	1.40	1.45

¹¹ For sources of data in tables see previous page.

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THE CURRENT SITUATION AND OUTLOOK

Current emphasis is being placed upon increased production, price control, and rationing. The quantity of foods produced in 1943 will depend in part on the weather and prevalence of insects and diseases; in part on the quantity of labor available; and in part on the amount of farm machinery available. Steps are being taken by the Extension Service and cooperating agencies to train workers, recruit and place local labor, place and supervise city youth on farms, provide for a woman's land army if needed, and to bring about the use of techniques to increase farmers' efficiency in the use of labor. Records kept by successful farmers indicate that the last item is one of the most important methods of handling a difficult labor situation. If you anticipate labor shortages, see your county farm adviser.

There are indications that certain types of farm machinery and equipment will become available in larger quantities within a few months. Increased production has been authorized and provision has been made for more flexibility in rationing farm machinery. It will still be necessary, however, to use all machinery to its maximum capacity by doing custom work and exchanging work. Neighborhood cooperation will help solve some of our most difficult problems.

Price supporting measures give the farmers some protection against drastic price declines except for cattle and sheep. The strong current demand, which is expected to extend for a year or more after fighting ceases, assures an outlet for food at good prices for some time to come.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

Currently, attention is focused more upon the prevention of runaway prices, with some differences of opinion as to how high prices of individual products should be permitted to rise. Ceilings have been placed upon prices of corn, most meat at retail and wholesale levels, dairy and poultry products, wheat flour, and many other foods.

Rationing goes with price control in order to prevent some people from buying more than their fair share of scarce commodities. As the duration of the war is extended, more and more goods and services will be rationed.

We shall need all the food that can be produced. The 1943 goals call for substantial increases in production, and it is hoped that the goals can be reached. Even if they are reached, however, our requirements for the armed forces and lend-lease shipments will reduce the amount of many kinds of foods available for civilian consumption below 1942 civilian consumption levels. More emphasis will be placed upon gardens and home preservation of food. The greatest shortages will be in canned fruits and vegetables, ice cream, coffee, sugar, canned fruit juices, cheese, and butter. The only foodstuff of which we are sure of a surplus is wheat.

G. L. JORDAN

MEAT CONSUMPTION IN TWO WORLD WARS

Meat consumption of the United States has been increasing rapidly in recent years. This is in sharp contrast to its course during the first World War. There is also a great difference in the methods currently used and those used during World War I by the Government to cope with meat shortages. The voluntary methods of 25 years ago appear to have been

more successful than the voluntary methods used in the past year.

Per capita meat consumption for the years 1913 to 1919 and for the years 1938 to 1942 are shown by Figure 1. It will be noted that per capita consumption for 1942 was at a level well above not only the immediately preceding years, but also above 1917 and 1918. Why, then, should we have heard so much about meat shortages during the

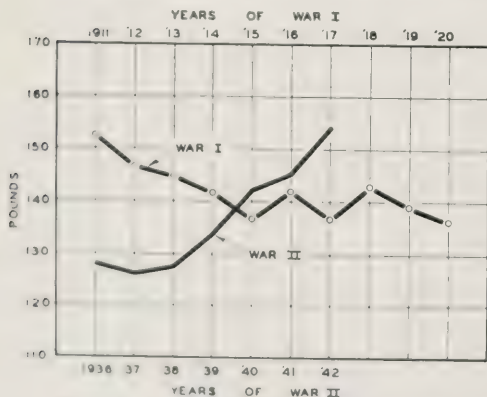


FIG. 1.—PER CAPITA MEAT CONSUMPTION IN TWO WARS

past year? Why should the Federal Government have embarked upon a system of meat rationing with all the effort and consumer discomfort which such a program involves?

One reason is that meat supplies actually available within the country have not been as great as is suggested by these per capita consumption figures. They include not only meat used within the United States, but also shipments to our armed forces. The average soldier eats much more meat per day than the average civilian. Furthermore, the army must undertake to build up adequate food stocks at strategic points, and there have presumably been shipping losses.

Misinterpretation of the per capita consumption statistics of the first World War may have been responsible for the adoption of ill-advised policies during the past year. Last fall, the Federal Government inaugurated a "Share the Meat" campaign which was approved by the Foods Requirements Committee of the

War Production Board and the U. S. Government Nutrition Coordinating Committee. Between them, these committees represented an imposing list of Governmental agencies having to do with problems of food supply.

In the material prepared and publicized in connection with the campaign, it was stated that the program was not one for meatless days and that, "In World War I when meatless days were used, per capita meat consumption went up, not down." The implication was, of course, that meatless days were not effective in reducing civilian meat consumption.

Estimates of per capita civilian meat consumption are shown in Figure 2.¹ These indicate that civilian meat consumption per person was consider-

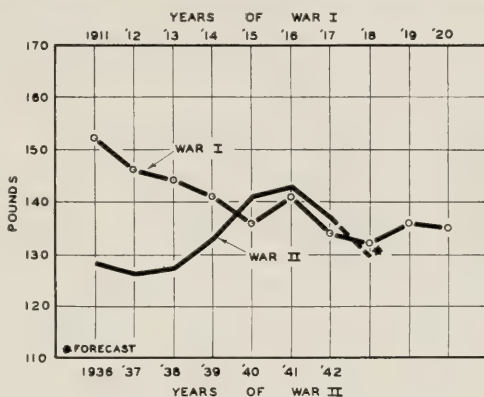


FIG. 2.—PER CAPITA CIVILIAN MEAT CONSUMPTION IN TWO WARS

¹Estimates for the years of World War I are based on the official figures for total consumption, from which have been subtracted the fresh meat equivalents of meats shipped to the A.E.F. and also a rough estimate of amounts used by the Army within the United States and by the Navy. The resulting estimates of total civilian consumption have been converted to a "per civilian" basis. The estimates are rough and can no doubt be improved upon, but give a much more accurate picture of per capita civilian meat consumption than do the official figures of total per capita consumption. Estimates for 1941 and 1942 and the forecast for 1943 are from the U. S. Department of Agriculture "Food Trade Letter," February 15, 1943. *The National Food Situation*, January, 1943, estimates run somewhat higher, namely, 142, 141, and 138 pounds per capita for the three years.

ably reduced in 1917 and 1918. The Food Administration's conservation policy involved more than the "Meatless Days" campaign. The entire policy was nevertheless based upon motivating consumers so that they voluntarily reduced their meat consumption. Insofar as one can judge from the above statistics of per capita consumption, these voluntary measures were effective even though wheat flour and sugar consumption were also being reduced.

The effectiveness of any campaign to save food cannot be measured in terms of consumption alone. Price must also be considered. Year-to-year variations in meat consumption of the country as a whole may be said to be due primarily to the variations in the quantity of meat made available to consumers. The individual consumer is influenced to adjust his consumption through rising or falling prices.

Thus far during the present war, retail meat prices have risen a little less than during the corresponding period of World War I. This is indicated by Table 1.

TABLE 1.—INDEX NUMBERS OF RETAIL MEAT PRICES, WORLD WARS I AND II

Years		Price in current dollars		Prices in dollars of constant purchasing power ^a	
War I	War II	War I (1914 = 100)	War II (1939 = 100)	War I (1914 = 100)	War II (1939 = 100)
1914	1939	100.0	100.0	100.0	100.0
1915	1940	96.3	99.2	95.5	98.5
1916	1941	104.6	111.3	96.5	105.1
1917	1942	132.5	130.4	103.8	111.3
1918	.....	167.1	.....	111.6	.....

^aIndex of retail meat prices multiplied by purchasing power of the dollar in buying cost-of-living items.

When, however, we take account of the more rapid decline in the purchasing power of the dollar in World War I, we find that there was a greater rise in retail meat values from 1939 to 1942 than in the corresponding period of World War I. In terms of dollars of constant purchasing power, 1942 retail meat prices were 11 percent higher than those of 1939, whereas in 1917 meat prices averaged about 4 percent higher than in 1914.

Price relationships consequently were more favorable to reduced meat consumption in 1942 than in 1917. But civilian per capita consumption in 1942 was considerably higher than in 1939, whereas in 1917 it was lower than in 1914.

It seems clear that voluntary motivation of consumers resulted in keeping civilian meat consumption during 1917 and 1918 at levels considerably below those of the preceding years. Furthermore, this was ac-

complished with only moderate increases in meat prices relative to prices of other commodities. One wonders whether similar methods of encouraging meat conservation during the past year could not have been undertaken. If such methods had been used perhaps we might have saved ourselves the effort and annoyance involved in a system of meat rationing.

Whether or not it would have been feasible to avoid meat rationing, it is clear that the methods used to influence meat consumption in the past 6 months have had very unsatisfactory repercussions. Under meat restrictions, supplies of meat available in different parts of the country were very unequal during the last quarter of 1942 and the first two months of 1943. In those regions where supplies normally consisted almost entirely of federally inspected meats, the amounts available to consumers really were only about 70 to 75 percent of the 1941 amounts. In many other places consumers could buy as much meat as they wanted at the prevailing prices until the latter part of February, 1943.

The "Share the Meat" campaign on the other hand appears to have had little net effect. The program lacked a sufficiently direct and positive means of motivation for most people. For some consumers, on the other hand, the "Share the Meat" campaign merely served to call attention to prospective meat shortage and caused them to "lay away" meat in cold storage lockers or in "quick freezers" in their homes. E. J. WORKING

CONSERVATION PRACTICES FOR HIGHEST WARTIME PRODUCTION

The value of conservation practices in securing maximum wartime production was again demonstrated by the results from farm account record studies in six soil conservation districts and project areas for the year 1942. These studies are carried on by the Department of Agricultural Economics, College of Agriculture, University of Illinois, and the Division of Economic Research, Soil Conservation Service, U. S. Department of Agriculture.

The farm account records have repeatedly shown that contour farming, along with grass waterways, is one of the most simple and inexpensive erosion control practices to use on sloping land. Contour farming with terraces, contour farming with buffer strips, strip cropping, or contour farming the entire field with the same crop increases yields of crops needed for food and feed, as well as aids in controlling erosion, as shown by Tables 1 and 2.

The average per acre yield for the three principal spring planted crops in Illinois is shown in Table 1. Corn yields were, on the average, 9.1

TABLE 1—AVERAGE PER ACRE YIELDS ON THE CONTOUR AND NOT ON THE CONTOUR ON THE SAME FARMS, ILLINOIS, 1942

Item	Corn	Soybeans	Oats
Number of farms	51	6	23
Yield on contour (bu.)	72.7	23.7	49.1
Yield not on contour (bu.)	63.6	21.4	41.2
Number of farms on which crop on the contour yielded higher	43	6	20
Difference in yield in favor of contouring	9.1	2.3	7.9

bushels per acre larger on contoured than on noncontoured land on all farms on which comparisons were made on contoured and noncontoured fields on the same farms. The differences in yields varied from 1.7 bushels an acre in St. Clair County to 14.5 bushels in McLean County. The contoured soybeans out-yielded the noncontoured beans on each of the six farms on which direct comparisons were available, the average yield advantage being 2.3 bushels an acre. Due to the late, wet spring, early killing frost, and unseasonably wet fall, comparisons of soybeans planted on the contour and not on the contour on the same farm were available on only six farms. On 23 farms, contour-drilled oats yielded 7.9 bushels more per acre than the oats on the same farms sowed in the usual manner. These data are particularly significant inasmuch as they are from the same farms on which part of the crop was grown on the contour, usually on the more sloping land, and part was grown up-and-down hill or by the usual planting arrangement. In general the fields showing the most serious erosion are contoured ahead of those showing less erosion which gives further significance to the higher yields on contoured fields.

Contour farming has not added to the cost of operating land. Farm records show and farmers state that working the land on the contour uses less power and less wear and tear on machinery than farming up-and-down the hills. These savings more than offset any inconvenience caused by farming on the contour.

TABLE 2—AVERAGE PER ACRE YIELDS ON THE CONTOUR AND NOT ON THE CONTOUR, ALL ACCOUNT KEEPING FARMS IN SIX CONSERVATION DISTRICTS AND PROJECT AREAS, ILLINOIS, 1942

Item	Corn	Soybeans	Oats	Barley	Wheat
Acres on contour	3 169	369	1 665	300	471
Acres not on contour	9 482	2 016	6 777	870	2 430
Yield on contour (bu.)	69.5	23.3	45.7	29.0	16.3
Yield not on contour (bu.)	62.4	19.3	41.6	21.3	13.5
Difference in yield in favor of contouring	7.1	4.0	4.1	7.7	2.8

Table 2 presents the acres grown on the contour and not on the contour and the respective yields of corn, soybeans, oats, barley, and wheat for all of the farm account keeping farms studied in the six conservation districts and project areas in 1942. Included in this comparison are some farms which had all of their crop acreage planted on the contour and some which had none on the contour. The data show consistently higher yields for the contour planted crops. Farmers who are progressive enough to farm their rolling land on the contour probably have followed other recommended practices such as use of limestone, growing legumes, use of adapted crop rotations, etc. However, the land on which the crops are grown on the contour generally is more rolling, more severely eroded, and possesses lower inherent productivity than the land on which the crops are grown under the usual field arrangement. An important reason for the higher yield from contour farming is that it prevents the run-off of most of the rain that falls during the growing season, thus aiding the growing plant as well as preventing harmful erosion.

Contour farming has consistently resulted in increased yields, as evidenced by farm account records on contouring started in 1939. The yield advantage in favor of contouring and other conservation measures has gradually become greater, indicating that while erosion and depletion are taking their toll on the nonconservation farms, maintenance and improvement of soil productivity is resulting on the farms following recommended conservation practices. The farm account records offer ample proof that farmers operating rolling land can contribute most to increased production, and also secure most profitable farming returns, by farming all of their rolling cropland on the contour.

ELMER SAUER and H. C. M. CASE

CHANGES IN LIVESTOCK NUMBERS IN 1942 ON 3,280 ILLINOIS ACCOUNTING FARMS¹

Illinois accounting farmers had more milk cows, beef cows, feeder cattle, brood sows, spring pigs, summer pigs, and fall pigs on their farms Janu-

¹The following analysis is based on inventories secured from farm account books that have been summarized by the Department of Agricultural Economics, University of Illinois, in the State-Wide Extension Project and in the Farm Bureau Farm Management Service. The data were tabulated by farming-type areas, and state averages were calculated by weighting area averages by the number of census farms in the area. The percentage changes were calculated from beginning of the year and end of the year inventories for identical farms. Year to year changes in livestock numbers varied in different parts of the state. Those interested in changes by farming-type areas should write to the Department of Agricultural Economics for a free mimeograph release on this subject.

ary 1, 1943, than on January 1, 1942. They had fewer feeder lambs. Increases on a percentage basis were large for all classes of hogs, but small for all other kinds of livestock.

The following data indicate the percentage increases in livestock on accounting farms from the beginning to the end of the calendar years 1938 through 1942:

<i>Class of livestock</i>	<i>1938</i>	<i>1939</i>	<i>1940</i>	<i>1941</i>	<i>1942</i>
			(percent)		
Milk cows.....	0	2	3	4	1
Beef cows.....	3	21	10	14	3
Feeder cattle.....	7	17	12	0	4
Feeder lambs.....	0	24	-2	25	-29
Brood sows.....	21	4	-2	24	13
Spring pigs.....	-14	38	-3	4	17
Summer pigs.....	-10	23	-2	13	24
Fall pigs.....	23	28	9	23	8

The following number of litters were farrowed per farm on Illinois accounting farms in 1939, 1940, 1941, and 1942:

<i>Time of farrow</i>	<i>1939</i>	<i>1940</i>	<i>1941</i>	<i>1942</i>
Spring.....	6.7	7.4	7.2	8.3
Summer.....	1.1	1.0	1.3	1.5
Fall.....	4.2	4.3	5.2	5.5
Total.....	12.0	12.7	13.7	15.3

The accounting farmers are on larger than average farms, and they are better informed concerning feed supplies, feeding rations, and the opportunity to make a profit from livestock than the rank and file of farmers in the state. The changes in livestock numbers as indicated by the records from accounting farms represent the planning of a progressive and efficient group of farm operators. The changes in livestock numbers on accounting farms have in the past reflected rather accurately changes on all farms in the state as indicated by pig crop reports and by slaughter statistics.

Milk cows and beef cattle. Milk cow numbers were slightly larger at the end of 1942 than at the beginning in all farming-type areas except Areas 7 and 9. In no area was the increase large, but these records indicate that farmers have not reduced their dairy herds in 1942 because of the labor shortage to the extent that some writers have indicated. Both the Chicago and St. Louis dairy areas show slight increases during 1942.

The increase in beef cow numbers, which has been at a very rapid rate for the past three years, was only 3 percent in 1942. There were 66 percent more beef cows on Illinois accounting farms on January 1, 1943, than on January 1, 1938. This upward trend in beef cow herds is a part of the normal beef-cattle cycle. Illinois farmers raise more beef calves

when the price of feeder cattle is high. The price of beef cows has now reached a level high enough to discourage the purchase of females for the production of beef calves. The scarcity of labor and the increased pressure of livestock numbers on feed supplies are factors which contribute to slow down the rate of increase in beef cow herds in Illinois.

The number of feeder cattle on accounting farms was 4 percent larger on January 1, 1943, than on January 1, 1942. There was no change in numbers in 1941, but large increases were noted for 1938, 1939, and 1940. There were 64 percent more feeder cattle on hand January 1, 1943, than January 1, 1938, with large increases in all areas except Area 7. There were more feeder cattle on accounting farms at the end of 1942 than at the beginning in all farming-type areas except Area 5. With culling from beef and dairy herds likely to be large in 1943, because total numbers are at a high level, and with large numbers of feeder cattle on farms in Illinois, and other corn-belt states, the total number of cattle and calves to be slaughtered in 1943 will be large. With the very profitable feeding ratio prevailing for hogs, it is likely that cattle will not be as well finished in 1943 as in 1942, since many farmers will prefer to feed the corn to hogs rather than to cattle. The cattle will, however, use the hay and pasture that is available and will get enough corn to finish them for the type of market that prevails in a war period. Farmers are trying to get the most total meat production from the available supply of grains, roughage, and protein concentrates.

Feeder lambs. Only 77 Illinois accounting farms had feeder lambs on January 1, 1943. There were 15,278 lambs at the beginning of 1943, contrasted with 24,497 at the beginning of 1942, a decline of 38 percent.

Hogs. Illinois accounting farms had 13 percent more brood sows on hand January 1, 1943, than a year earlier, and the percentage increase was larger for gilts than for old sows; at the end of 1942, 54 percent of all the sows inventoried were gilts, as compared with 49 percent gilts a year earlier.

There were 17 percent more spring pigs, 24 percent more summer pigs, but only 8 percent more fall pigs on accounting farms January 1, 1943, than on January 1, 1942. The increase in the number of summer and fall pigs combined was 11 percent which was not as large as was indicated by the December Pig Crop Report released by the U. S. Department of Agriculture. That report indicated that there would be a 17-percent increase in Illinois fall farrow for 1942 over that for 1941.

The number of 1942 fall litters farrowed on accounting farms was 6 percent larger than the number farrowed in the fall of 1941. Spring litters, however, showed a 15-percent increase over 1941. There were 15.3

litters farrowed per farm on accounting farms in 1942, a 12-percent increase over 1941 and a 28-percent increase over 1939.

Livestock numbers in the United States.

A sharp increase in hogs and cattle during 1942 brought the number of livestock on farms in the United States on January 1, 1943, to a new all-time record. The hog and cattle increase more than offset a reduction in sheep, horses, and mules. In terms of grain consuming ability, the 1942 increase for all livestock was 11 percent (Table 1 and Fig. 1).

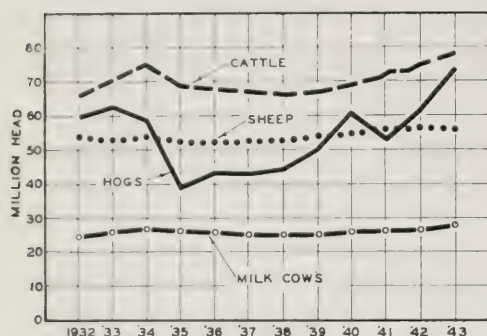


FIG. 1.—NUMBERS OF LIVESTOCK ON FARMS IN THE UNITED STATES ON JANUARY 1, 1932 TO 1943

The numbers of all cattle have been increasing rapidly since 1938. Milk cows have been increasing slowly since 1938, and sheep increased from 1936 to 1942 but decreased during 1942. The sharp decline in hog numbers in 1940 temporarily interrupted an upswing which started in 1935.

(15.5 bushels of corn equal in value to 100 pounds of hogs) is very favorable for hog feeders and will likely result in a large farrow of summer pigs.

The continued upward swing in the cycle of cattle numbers during 1942 brought the total of all cattle on farms January 1, 1943, to a new high record of 78.17 million head—over 3 million head larger than the previous record of a year earlier. This increase occurred despite the fact that the commercial slaughter of cattle and calves reached a new record

TABLE 1.—NUMBERS OF LIVESTOCK ON FARMS IN THE UNITED STATES ON JANUARY 1 (Thousand head)

Class of livestock	Average 1932-1941	1941	1942	1943
Milk cows	25 316	25 478	26 398	26 946
All cattle	68 418	71 461	75 162	78 170
Sheep	52 386	54 283	56 735	55 089
Hogs	51 508	54 256	60 377	73 660
Horses and mules	15 951	14 136	13 720	13 390
Chickens	420 201	422 909	474 910	540 107
Turkeys	6 510	7 252	7 623	6 549

tonnage. Slaughter in 1943 may therefore be large, and at the same time we may have a further increase in cattle numbers. Even with a very high 1943 slaughter, the strong demand for beef will probably hold live cattle prices near the highest levels permitted by beef ceilings.

The combined stocks of corn and oats on farms January 1, 1943, were the largest on record; therefore, feed grain supplies are ample for the remainder of 1943. The carry-over of corn on October 1, 1943, will be appreciably less than the 492 million bushels on hand October 1, 1942. The prospective spring pig crop of 1943 plus the fall crop of 1942 will be enough larger than the two previous pig crops to consume an additional 280 million bushels of corn. Much of this increased disappearance, however, will occur after October 1, 1943, as the spring pig crop now being farrowed will not be marketed until after October 1, 1943. If a high level of livestock production is to be maintained in 1944, a large production of grains and forage is needed in 1943.

P. E. JOHNSTON and W. N. THOMPSON

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Department of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1942 inclusive, from special mimeographed release by Bureau of Agricultural Economics; currently, not adjusted for seasonal variation from Poultry and Egg Situation, beginning with March, 1943, issue. ⁹Survey of Current Business, December, 1942 and subsequent monthly issues, unadjusted for seasonal variation. Prior to 1939, "factory payroll" index, with 1923-1925 base, multiplied by 1.087 to obtain the "Weekly Wages" index with 1939 base. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Circular 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work—Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Weekly wages, all manufacturing industries, unadjusted ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period..	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1924-29	1939	1935-39
1929.....	95	105	104	99	103	103	104	110	120	110
1930.....	86	88	89	94	83	87	93	100	98	91
1931.....	73	65	62	80	58	58	72	84	74	75
1932.....	65	48	41	69	43	43	62	66	51	58
1933.....	66	51	45	71	49	51	72	62	54	69
1934.....	75	65	61	80	57	55	69	72	70	75
1935.....	80	79	82	81	64	65	80	78	80	87
1936.....	81	81	86	80	74	82	103	89	93	103
1937.....	86	86	96	84	80	87	103	98	111	113
1938.....	79	69	69	80	72	81	101	92	85	89
1939.....	77	65	65	78	72	81	97	99	100	108
1940.....	78	68	69	79	78	90	113	106	114	123
1941.....	87	82	87	85	101	116	135	129	165	156
1942 Feb....	97	101	106	95	127	134	141	164	208	172
Mar....	98	103	108	97	127	154	159	169	215	172
Apr....	99	104	111	98	136	143	146	173	221	173
May....	99	104	112	99	130	144	145	175	229	174
June....	99	104	110	99	131	149	150	184	234	176
July....	99	105	111	99	132	125	126	185	243	178
Aug....	99	106	115	99	146	128	129	189	255	183
Sept....	100	108	114	99	148	138	139	195	262	186
Oct....	100	109	116	100	151	259	259	203	271	189
Nov....	100	110	115	101	160	191	191	208	280	190
Dec....	101	114	118	102	162	184	180	214	288	194
1943 Jan....	102 ¹¹	117 ¹¹	124 ¹¹	104	161	...	...	...	...	196
Feb....	102 ¹¹	120	128	105 ¹¹	...	...	...	...	...	199

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			March 1942	Current months		
	1924-29	1941	1942 ¹¹		January	February	March
Corn, bu.	\$.81	\$.63	\$.77	\$.75	\$.88	\$.89	\$.94
Oats, bu.	.42	.36	.48	.52	.54	.56	.60
Wheat, bu.	1.30	.93	1.13	1.17	1.33	1.35	1.36
Barley, bu.	.66	.55	.74	.75	.85	.85	.85
Soybeans, bu.	1.94	1.24	1.65	1.79	1.60	1.60	1.64
Hogs, cwt.	9.97	9.37	13.37	12.80	14.15	14.90	14.90
Beef cattle, cwt.	8.57	10.07	11.93	11.30	12.70	13.40	13.90
Lambs, cwt.	12.22	9.85	12.28	10.80	14.00	14.20	14.20
Milk cows, head	78.00	80.00	102.00	99.00	120.00	126.00	130.00
Veal calves, cwt.	11.27	11.19	13.63	13.30	14.40	14.90	15.40
Sheep, cwt.	6.52	4.43	5.50	5.60	6.00	6.60	7.00
Butterfat, lb.	.42	.33	.39	.34	.47	.48	.48
Milk, cwt.	2.32	2.05	2.40	2.30	2.90	2.90	2.90 ¹¹
Eggs, doz.	.30	.22	.29	.25	.34	.32	.33
Chickens, lb.	.21	.15	.19	.18	.22	.23	.23
Wood, lb.	.36	.37	.40	.40	.40	.40	.41
Apples, bu.	1.59	1.07	1.53	1.65	2.00	2.00	2.20
Hay, ton	13.88	8.49	11.33	12.70	12.70	13.60	13.80
Potatoes, bu.	1.39	.82	1.32	1.25	1.40	1.45	1.70

¹¹For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

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THE CURRENT SITUATION AND OUTLOOK

The past month has been characterized by some decline in wheat prices, a rise in corn prices to the new ceiling (\$1.07 at Chicago for No. 2 yellow), steady oats prices, considerable weakness in hog prices, and steady cattle prices. Wheat disappearance during the first quarter of 1943 was exceptionally heavy. Substantial quantities of wheat were used for alcohol manufacture and for livestock feeding. Corn is not coming to market as fast as desired by the processing industries, but farmers have recently sold more freely. Steps are being taken by the government to get more corn marketed but no increase in price ceilings can be expected. There is no longer any inducement to hold corn on the farm except for feed.

Farm land values are rising. The Federal Reserve Bank of Chicago reported a rise of 15 percent between April 1, 1942, and April 1, 1943. Illinois Agricultural Experiment Station studies indicate great variation between areas of the state. Farm land values appear to have risen most near cities. The chief contributing factors have been the rapid and extensive rises in farm incomes, more city money seeking investment, and continued fear of further inflation.

The national price policies appear to be less inflationary than at any time since the beginning of the war. One result is to attempt to lower prices of farm products if they appear too high in relation to the price ceilings on consumers goods. This has led to talk of price ceilings on

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

livestock, particularly hogs. On the other hand, the government has raised its guaranteed price to farmers on the 1943 crop of soybeans to \$1.80 a bushel in order to induce greater production. We may later have to shift over to an economy that uses more cereals and soybeans in the human diet and less meat in order to obtain the greatest amount of nutrients from the use of our land, labor, and equipment.

G. L. JORDAN

RECENT DEVELOPMENTS REGARDING PRICE INFLATION

On April 9, 1943, a new executive order was issued by President Roosevelt ostensibly designed to put an end to inflation. In a statement accompanying the order, it was said that under the act of October 2, 1942, "... inflation has been slowed up. Now we must stop it." The course of price indexes, however, does not indicate that the amendment of last October 2 to the Emergency Price Control Act and the Presidential directive which immediately followed it succeeded in slowing up the progress of inflation.

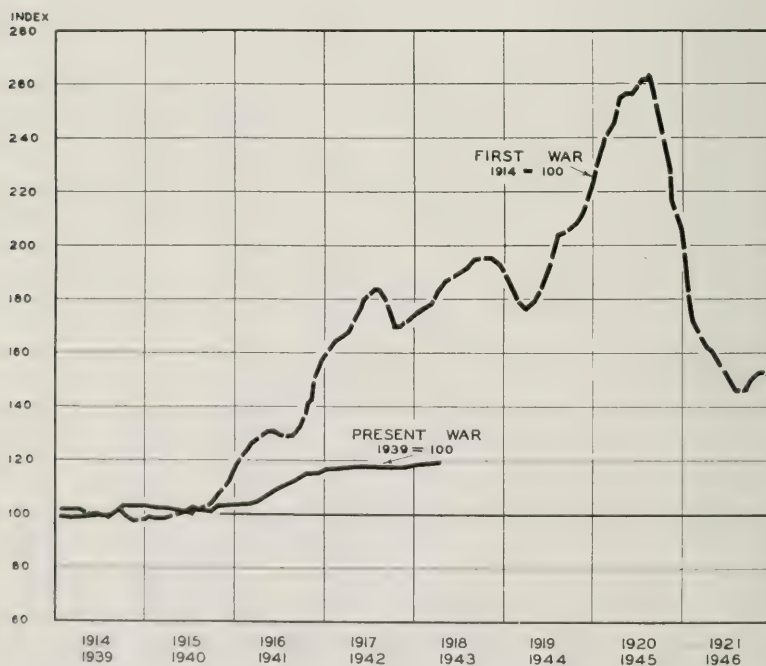


FIG. 1.—WHOLESALE PRICES OF ALL COMMODITIES OTHER THAN FARM PRODUCTS AND FOODS IN FIRST WORLD WAR AND PRESENT WAR

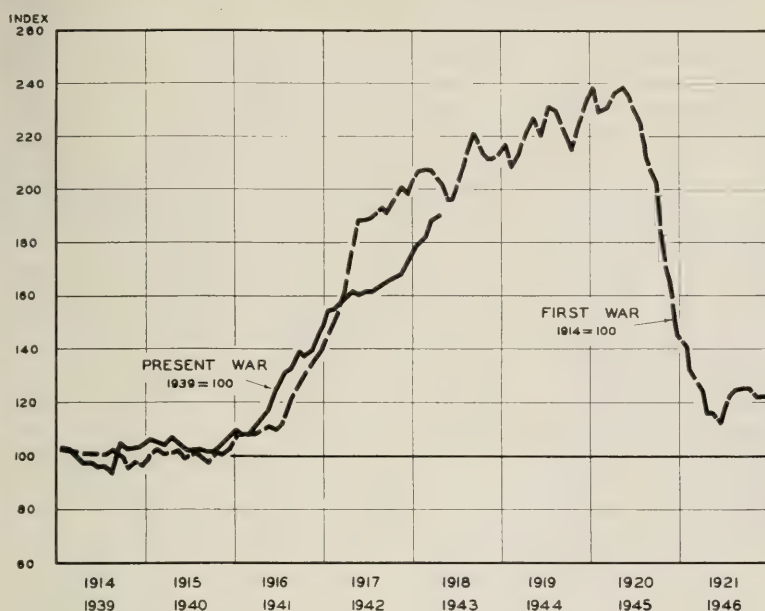


FIG. 2.—WHOLESALE PRICES OF FARM PRODUCTS IN FIRST WORLD WAR AND PRESENT WAR

The accompanying charts show index numbers of wage rates and of wholesale prices of three groups of commodities. It will be noted that in the case of farm products, the rise of prices since October was more rapid than that of the preceding 6 months. In the case of foods, on the other hand, there has been no material change in their rate of advance. Wholesale prices of all commodities other than farm products and foods have changed very little since last October, but neither had they changed much in the preceding 6 months. Wage rates have apparently continued to rise during the past 6 months at about the same rate at which they advanced during the preceding year.

Governmental policy relative to inflation has been exceedingly inconsistent. Methods used in financing federal expenditures have been highly inflationary in their nature. Direct price control policies as provided for by law and as carried out by the Office of Price Administration have, for the most part, tended to prevent price increases. Wage policies of the past may be characterized as having been mildly contributory to inflation, but it would appear that these may now have been changed.

It is encouraging to note that the President's statement recognized that it is impossible to, "stop inflation solely by wage and price ceilings." He goes on to say, "To complete the job, Congress must act to reduce

and hold in check the excess purchasing power. We must be prepared to tax ourselves more, to spend less, and save more." The need is clearly recognized by the President, but it remains to be seen what will be done about it.

In a way, we have already "saved" all that has gone into federal expenditures for the war. Everything which is used in the war must have been produced by current or past effort. Much as future generations may suffer because of the present war, they cannot produce the things we now use. The trouble is that we have not reduced our ordinary consumption sufficiently through reducing money expenditures. In large measure, we have done it through reducing the value of the money we spend—that is, through price inflation.

From December, 1941, to January, 1943, United States Government securities held by commercial banks increased from 22 billion dollars to 43 billion dollars. Meanwhile the Federal Reserve Banks have increased their holdings by 3.7 billions. As far as prices are concerned, this increase of nearly 25 billion dollars in the amount of money advanced to the government by the banking system has had much the same effect as would an equal issue of greenbacks by the federal government. There is a difference, of course. For money loaned by the commercial banks, the government pays interest; whereas if greenbacks had been issued, these would require no interest payments. This tremendous credit inflation is placing great strain upon the other governmental mechanisms designed to prevent price inflation. Indeed, as long as methods of financing governmental expenditures continue to be so highly inflationary, direct price and wage controls can do no more than delay the progress of inflation.

If all of the government securities which are issued were purchased out of current income and none of them were purchased through bank credit expansion, the floating of bonds by the government would have no inflationary effect. The fundamental need in controlling inflation is, then, the finance of government expenditures from two and only two sources: (1) from taxation receipts, and (2) from the sale of securities which are purchased by people out of current income. From December, 1941, to January, 1943, only about half of the increase in government securities was purchased in this manner.

Direct price controls and rationing, of course, have some effect in causing people to purchase government securities from current "savings." Price control and rationing combined tend to limit the amount of money which people can spend for their living. They consequently force some people either to accumulate funds or to purchase government securities with whatever income remains from their current living expenditures.

Excepting insofar as they accomplish these things, however, price controls cannot succeed in their ultimate objective of preventing inflation.

Generally speaking, the progress of inflation thus far during the current war has been less rapid in the United States than it was during the corresponding period of World War I. From the 1939 level, the index of prices of all commodities other than farm products and foods advanced only 19 percent up to mid-April, whereas in the corresponding period of World War I it had advanced by more than 80 percent. To date, this is the outstanding achievement of methods of price control during the current war. The course of the indexes is shown in Figure 1.

The foregoing comparison cannot be taken entirely at face value, inasmuch as the Bureau of Labor Statistics index of all commodities other than farm products and foods is not entirely comparable in the two war periods. At the present time it includes a larger proportion of the "inflexibly priced" commodities than was the case during World War I. Then, too, it must be recognized that there has probably been some deterioration of quality of commodities. The latter, however, presumably occurred during World War I as well as during the present war.

Wholesale prices of farm products have also advanced less during the current war than during the corresponding period of World War I, but

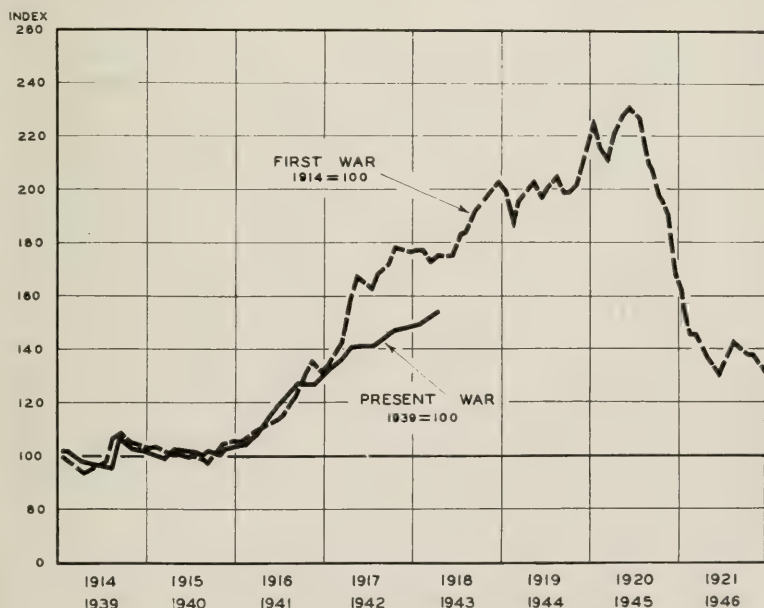


FIG. 3.—WHOLESALE PRICES OF FOODS IN FIRST WORLD WAR AND PRESENT WAR

in this case the difference is small. In April of this year, as shown by Figure 2, they were averaging about 90 percent higher than in 1939; whereas in April, 1918, wholesale prices of farm products were 104 percent above the 1914 level.

In the case of foods, the comparison is slightly more favorable. Wholesale prices of foods in mid-April, 1943, were approximately 53 percent higher than their average for 1939, whereas in April, 1918, they were 75 percent higher than in 1914. The course of these indexes for the two war periods is shown by Figure 3.

The rise in wage rates also appears to have been somewhat less rapid in recent months than in the corresponding period of World War I. Unfortunately, however, available data concerning wage rates are neither as adequate nor as up to date as are the commodity price data. The most comprehensive index of wage rates available for such comparison is that furnished by the Federal Reserve Bank of New York (Figure 4). Up to 1919, this index is available only on an annual basis. The most recent index now available is for January, 1943, when it was 32 percent higher than in 1939. An interpolation between the 1917 and 1918 figures indicates that in January, 1918, wage rates were approximately 30 percent higher than in 1914. The indexes are shown graphically in Figure 4.

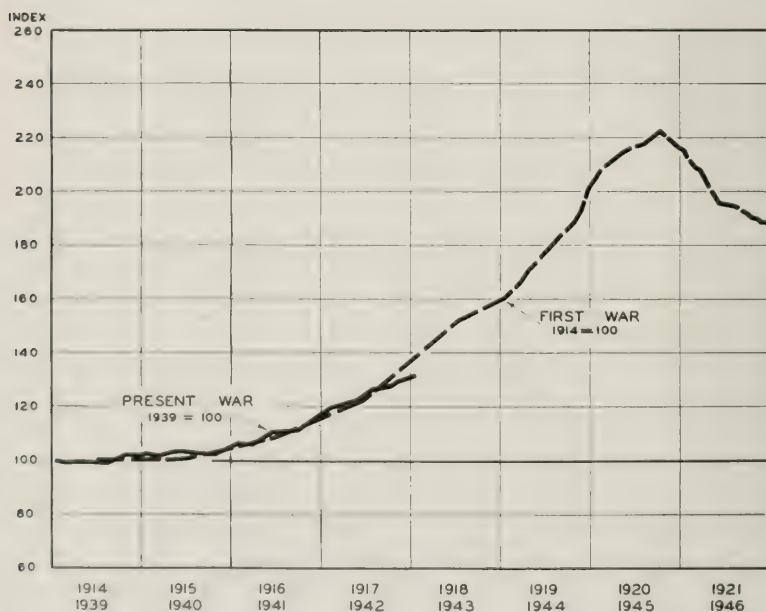


FIG. 4.—WAGE RATES IN FIRST WORLD WAR AND PRESENT WAR

The events of the past six months, consequently, emphasize the need for a consistent program of inflation control which will remedy the basic causes. The lack of such a program will continue to breed industrial disputes and contribute to absenteeism, malnutrition, and general poor morale throughout the country. The need for controlling the causes of inflation cannot be overemphasized.

E. J. WORKING

WHAT SHOULD FARMERS DO WITH INCREASED EARNINGS?

Net farm earnings are increasing with higher prices and increased output. At the same time spendings in certain directions are curtailed. Purchases of new automobiles, farm equipment, household equipment are limited. New building is limited by WPB restrictions and shortages of materials. Labor shortages are forcing farm families to do more of the work. The result is that savings of farm families are increasing.

The first claim on these savings is the same in wartime as in peacetime: the building up of farm working capital. But the incentive is greater in wartime than in peacetime because of the greater demands for increased output. A sharp increase has occurred in inventories of animals, particularly of hogs and poultry; smaller increases have occurred in cattle. Some increase has been possible in small buildings such as hog and poultry houses. Much second-hand equipment is being bought at high prices.

Drainage work appears to conflict less with war production than any other form of capital improvement and a great deal of this is going on. All of the limestone and phosphate available under conditions of shortage in labor and transportation is being purchased.

The two most general uses of wartime earnings are: debt payments and purchases of government bonds. Mortgage debts in particular are being reduced; tenants also are getting out of debt. Debt payment would seem to be a wise use of earnings; they can now be paid with dollars of lower purchasing power in terms of farm commodities; reduced debts will permit postwar competition to be met more easily.

Government bonds represent a good investment. They are the obligations of one of the strongest governments of the world and will certainly be repaid in dollars when they mature. Interest rates are low but not much lower than on other high grade investments.

The purchase of bonds provides a good way to accumulate a reserve for postwar contingencies. Much equipment will then have to be replaced. Incomes will be lower. Creation of reserves by farmers is highly desirable at this time.

Some farmers' savings are going into loans to other farmers. One difficulty with such investments is that they may not be set up so as to be repaid in a regular fashion. At this time all such loans should be set up so that they will be repaid within a reasonable time. This is an easy time for borrowers to pay, and if debts are steadily reduced during this period, the risk of later loss by the lender will be reduced.

A few farmers are buying land. This will be discussed below. The priority on uses to which farmers' savings might be put are: (1) increasing working capital in forms which expand output of needed goods; (2) possible land improvements which will make for higher yields; (3) reduction of debts to a safe level; (4) purchase of government bonds as an investment or as a means of accumulating a postwar reserve. The ability of different people to buy bonds varies greatly. The farmer who is expanding his output can buy fewer than the man who has his business built up to optimum size. The above priority recognizes the desirability of maximizing farm output and of helping to finance the war. When a man saves to pay debts, the recipient of the payment is likely to be forced to buy government bonds for lack of alternative opportunities for investment.

Farmers will have to pay more and more federal taxes because of higher levels of net earnings and probable higher rates. Farm income is not adapted to payments through deduction at source. Therefore, even if federal taxation goes onto a "pay as you earn" basis, it will not be applied to farmers. This creates a situation in which farmers will have increased tax liability for previous earnings. To deal with this problem, a special class of government bonds which can only be used for payment of income taxes has been issued. They earn 16 cents interest per \$100 per month and can be purchased through any bank. By buying these systematically as income is realized, farmers can acquire assets to offset their liability for income taxes. Such liability might be exceedingly troublesome when we come to a year with lower incomes.

The most problematical investment for farmers' savings is the purchase of land. Land has increased in price and very likely will increase still more. What the price of land will be over the longer future depends on the long-time trend of prices. Historically prices of farm products have risen during wars and declined following wars. The huge government debt will force the federal government to avoid deflationary policies. Various schemes for supporting farm prices will likely be attempted. But in spite of these considerations sharp declines in prices are likely when wartime demands end.

Speculative purchases of land with small down payments certainly should be avoided. As prices rise, the percentage of down payment

necessary to assure ability to retain the property in the postwar period will increase. Illinois agriculture came out of the last war with a heavy burden of debt. This caused many difficulties in the two following decades. We will be in much better position to face postwar difficulties if we can avoid tying up too large a proportion of wartime earnings in small down payments on land.

L. J. NORTON

POSTWAR CHANGES IN THE DAIRY INDUSTRY

"What changes will take place in the dairy industry following the war?" While opinions on this question differ, three basic factors which are likely to force changes are: (1) Major declines in prices of dairy products resulting from drastic reductions in war and lend-lease expenditures; (2) Increasing competition of vegetable fats with butterfat; and (3) Keen competition of reconstituted whole milk powder and evaporated milk with market milk.

Looking back to World War I we find that the price of milk to producers in the Chicago milkshed declined from \$3.25 per 100 pounds in 1919 to \$1.87 in 1922, or a decrease of 42 percent. From 1919 to 1922 Chicago wholesale butter prices decreased from 58.5 cents a pound to 39.2 cents, a decrease of 33 percent. Cheese prices also fell 33 percent from 1919 to 1922. Assuming that a similar situation occurs after World War II, we may expect a decrease of from 30 to 40 percent in prices received by producers for dairy products within three or four years after the war ends.

Why are butterfat producers likely to face increasing competition with vegetable fats? Two answers to this question are: (1) Improved quality of vegetable fats; and (2) Compulsory use during the war will get consumers accustomed to eating vegetable fats.

Food scientists generally agree that, when properly enriched with vitamins, from a nutritional viewpoint, vegetable fats are as good, pound for pound, as butterfat. As a dairyman, I am a bit skeptical of this conclusion. As a realist, however, I cannot ignore the conclusions reached by these nutritionists.

Granted that following the war we are going to have drastic reductions in consumer incomes, in prices of dairy products, and increased competition of vegetable fats, what should dairymen do about it?

The best answer to this question is improved quality and more efficient production and marketing. Milk production costs can be lowered if dairymen generally follow the practices now used by the more efficient dairy-

men. Denmark increased its butterfat production from around 180 pounds annually per cow in 1900 to 269 pounds in 1929. Through proper education American dairymen can do the same thing.

What about competition of market milk with reconstituted whole milk powder and reconstituted evaporated milk? While still in the experimental stage, several dairy technologists in whom I have confidence, agree that within two or three years it will be possible to manufacture whole milk powder and evaporated milk and later to mix water with these products so that the consumer cannot tell the difference between the reconstituted products and market milk. Assuming they will be able to do this, this will mean that reconstituted milk made from Wisconsin or Illinois whole milk powder or evaporated milk will compete with market milk in Washington, D. C., Jacksonville, Florida, and in all of the other cities in the country. Presumably this competition, at least in its early stages, would be through the sale of whole milk powder in stores.

How can market milk people meet this competition? Marketing costs can be lowered as much as 2 or 3 cents per quart if milk dealers generally adjust their businesses to become as efficient as those of dealers in a few markets. And the key to more efficient handling of milk lies in mass distribution through stores and the use of large-volume efficient routes for home deliveries. Washington, D. C., has the most efficient milk distribution system in the United States.¹ Costs of distributing milk through stores in this city are nearly 3 cents per quart less than the United States average. What Washington has done can be done in other cities if those cities introduce the same methods now used in Washington.

R. W. BARTLETT

TIME OF MOVEMENT AND PRICES OF ILLINOIS PEACHES, 1942

The carlot rail movement of Illinois Elberta peaches in 1942 began August 6—two days earlier than in 1941—and was completed on August 21. A total of 365 cars was shipped during this period, but 256 cars (70 percent of the total rail shipments) were shipped during the 6-day period August 10 to 15, inclusive. Shipments from the Anna and Centralia areas overlapped to considerable extent, thus shortening the total shipping period for the Illinois crop.

When the Illinois peach season started, South Carolina was still shipping heavily, and peaches were still moving from both Arkansas and Georgia, but during the period when Illinois shipments were heaviest

¹See *Illinois Farm Economics*, June, 1942, pp. 293-299.

TABLE 1.—CARLOT PEACH SHIPMENTS FROM IMPORTANT STATES,
AUGUST 6-21, 1942^a

	Thurs. 6	Fri. 7	Sat. 8	Sun. 9	Mon. 10	Tues. 11	Wed. 12	Thurs. 13	Fri. 14	Sat. 15	Sun. 16	Mon. 17	Tues. 18	Wed. 19	Thurs. 20	Fri. 21
Ill.....	4	13	24	9	33	37	44	40	54	48	8	15	19	9	5	3
Ala.....	2	3	4	1	4	5	1	..	..	..	..	..	..	..	..	..
Ark.....	10	7	3	2	4	..	..	..	..	..	..	..	..	..	..	..
Calif....	89	66	57	38	60	66	60	82	78	44	60	75	102	112	107	54
Ga.....	27	11	9	1	9	7	4	2	2	1	..	..	..	..	..	..
N. C.....	8	8	2	..	1	1	..	3	1	4	..	..	..	..	..	..
S. C.....	262	182	104	8	27	22	6	3	2	2	..	6	8	5	(b)	(b)
Tenn....	3	5	5	3	..	1	..	..	..	..	..	..	..	..	..	..
Va.....	..	13	13	9	20	48	63	58	62	110	80	83	58	42	18	51
Others..	9	3	2	2	4	7	14	13	11	30	11	36	23	69	70	77
Total...	414	311	223	73	162	194	192	201	210	239	159	215	210	237	200	185

^aCompiled from Daily Peach Reports issued by Federal-State Market News Service.^bIncluded in "Others."TABLE 2.—PRICES OF ILLINOIS PEACHES, 1942. (ELBERTA, U. S. No. 1,
2-INCH MINIMUM, F.O.B. SHIPPING POINT)

Date	Price range	Date	Price range
Aug. 5.....	\$2.00-2.20	Aug. 13.....	\$2.15-2.35
6.....	2.00-2.10	14.....	2.20-2.45
7.....	1.85-2.10	15.....	Too few to quote
8.....	1.90-2.10	17.....	2.25-2.70
10.....	2.00-2.10	18.....	2.60-2.75
11.....	2.00-2.20	19.....	2.60-2.85
12.....	2.10-2.35		

shipments were relatively light from these three states. Virginia and California were the principal peach shippers besides Illinois that week, and a considerable portion of the California movement was to canning plants within the state (Table 1).

Shipments of peaches from the later states did not interfere with the successful marketing of the latest shipments of the Illinois crop. Michigan Elbertas were not reported on the Benton Harbor market until August 19, only six cars of Pennsylvania peaches were shipped before August 19, and the first car of Colorado Elbertas was not shipped until August 23, which was after the Illinois season was over.

With this small amount of competition, together with a relatively short Illinois crop and ample purchasing power of consumers, it is not surprising that Illinois peaches brought the best prices that have been realized on this product for many years. Very few Illinois Elbertas of United States Number 1 grade were sold under \$2.00 per bushel, f.o.b. shipping point, and the price reached as high as \$2.85 per bushel before the season closed (Table 2).

J. W. LLOYD

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Weekly wages, all manufacturing industries, unadjusted ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period...	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1935-39	1939	1935-39
1929.....	95	105	104	99	103	103	104	121	120	110
1930.....	86	88	89	94	83	87	93	110	98	91
1931.....	73	65	62	80	58	58	72	93	74	75
1932.....	65	48	41	69	43	43	62	72	51	58
1933.....	66	51	45	71	49	51	72	68	54	69
1934.....	75	65	61	80	57	55	69	79	70	75
1935.....	80	79	82	81	64	65	80	86	80	87
1936.....	81	81	86	80	74	82	103	98	93	103
1937.....	86	86	96	84	80	87	103	107	111	113
1938.....	79	69	69	80	72	81	101	101	85	89
1939.....	77	65	65	78	72	81	97	108	100	108
1940.....	78	68	69	79	78	90	113	118	114	123
1941.....	87	82	87	85	101	116	135	144	168	156
1942 Mar....	98	103	108	97	127	154	159	170	215	172
Apr....	99	104	111	98	136	143	146	175	221	173
May....	99	104	112	99	130	144	145	180	229	174
June....	99	104	110	99	131	149	150	187	234	176
July....	99	105	111	99	132	125	126	188	243	178
Aug....	99	106	115	99	146	128	129	193	255	183
Sept....	100	108	114	99	148	138	139	198	262	186
Oct....	100	109	116	100	151	259	259	205	271	190
Nov....	100	110	115	101	160	191	191	209	280	194
Dec....	101	114	118	102	162	184	180	215	288	196
1943 Jan....	102 ¹¹	117	124	104	160	168 ¹¹	162 ¹¹	215	...	199
Feb....	102 ¹¹	119	128	105	172 ¹¹	...	...	219	...	202
Mar....	103 ¹¹	123 ¹¹	131	104	...	...	...	...	...	203 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			April 1942	Current months		
	1924-29	1941	1942		February	March	April
Corn, bu.....	\$.81	\$.63	\$.77	\$.76	\$.89	\$.94	\$.98
Oats, bu.....	.42	.36	.48	.52	.56	.60	.62
Wheat, bu.....	1.30	.93	1.13	1.10	1.35	1.36	1.36
Barley, bu.....	.66	.55	.74	.78	.85	.85	.88
Soybeans, bu.....	1.94	1.24	1.65	1.73	1.60	1.64	1.64
Hogs, cwt.....	9.97	9.37	13.37	13.70	14.90	14.90	14.50
Beef cattle, cwt.....	8.57	10.07	11.93	11.90	13.40	13.90	13.80
Lambs, cwt.....	12.22	9.85	12.28	11.40	14.20	14.20	14.20
Milk cows, head.....	78.00	80.00	102.00	100.00	126.00	130.00	132.00
Veal calves, cwt.....	11.27	11.19	13.63	13.50	14.90	15.40	14.20
Sheep, cwt.....	6.52	4.43	5.50	6.00	6.60	7.00	7.50
Butterfat, lb.....	.42	.33	.39	.36	.48	.48	.50
Milk, cwt.....	2.32	2.05	2.40	2.25	2.90	2.90	2.85 ¹¹
Eggs, doz.....	.30	.22	.29	.25	.32	.33	.33
Chickens, lb.....	.21	.15	.19	.19	.23	.23	.24
Wool, lb.....	.36	.37	.40	.41	.40	.41	.41
Apples, bu.....	1.59	1.07	1.53	1.65	2.00	2.20	2.60
Hay, ton.....	13.88	8.49	11.33	13.00	13.60	13.80	14.50
Potatoes, bu.....	1.39	.82	1.32	1.40	1.45	1.70	2.20

¹⁻¹²For sources of data in tables see previous issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

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THE CORN SITUATION

Corn is the basic feedstuff for grain consuming animals. The supply on hand and the way in which it is distributed are matters of vital concern to our wartime food program. Since the Food-for-Freedom program was first launched early in 1941 it has been our national policy to keep feedstuffs low in price in relation to prices of livestock and of livestock products. The aim was to stimulate production of animal products. This has been successful and outputs of meat, milk, and eggs have all been sharply increased.

How feed prices have been held down. Feed was kept cheap by three devices: (1) Sales of government owned corn; (2) sales of government owned wheat at feed prices; (3) fixing maximum prices of most ingredients of mixed feeds and of corn. This policy reduced government owned stock of corn to 28 million bushels on April 1, 1943, compared with 231 million two years earlier. Government sales of wheat have recently been at a very rapid rate. With increasing consumption of wheat in various directions—food, feed, alcohol manufacture—and the prospects for a shorter crop, it is now estimated that by the middle of 1944 our surplus of wheat will have disappeared. Recently the government has turned to imports of grain from Canada for livestock feed. Trade estimates indicate that transportation facilities will permit the importation of perhaps 100 million bushels in the coming year.

Consequences of this policy. Economic analysis would suggest that this cheap feed policy would have two effects: (1) Stimulate livestock

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

production; (2) use up the existing supplies of feed. Both these results have transpired. What in effect we have done was recklessly to throw in our reserves of feed to get livestock expansion. The reserves have dwindled, and from now on the battle for livestock products must be fought largely with new recruits, i.e., current production. The late spring and the obvious difficulties in the way of repetition of another bumper corn crop highlight the situation and have set in motion the first reaction to the altered situation—a heavy movement of hogs to market.

The national picture. How about corn supplies? This can be shown in the following table:

	1940-41 (million bu.)	1941-42 (million bu.)	1942-43 (million bu.)
Total supply, October 1.....	3,155	3,318	3,624
Total supply, April 1.....	1,445	1,408	1,458
Disappearance, October to March.....	1,710	1,910	2,166
Carry-over, October 1.....	646	492	(?)
Disappearance, April to September.....	799	916	(?)

In each of the last two years we started out with larger stocks of corn than in the previous year, due to larger crops. But disappearance has been higher in each year. For the six months, October-March, it was 200 million bushels larger in 1941-42 than in 1940-41, and 256 million bushels larger in 1942-43 than in 1941-42. From April to September disappearance in 1941-42 exceeded disappearance in 1940-41 by 117 million bushels. If the heavier rate of consumption in 1942-43 should continue for the balance of the season, consumption for the last six months of this marketing season could be about 1,040 million bushels and our carry-over would be down to about 460 million bushels. It is very likely that the carry-over will be even less than this.

Much has been made of the fact that total stocks of corn were 50 million bushels larger on April 1, 1943 than a year earlier. But in view of the fact that consumption for the first six months of the year ran over 40 million bushels a month larger than a year earlier, it is highly probable that by the present date corn stocks are lower than a year earlier. This is a very dynamic situation.

Illinois has disposed of corn at faster than the national rate. The situation is more serious in Illinois. The figures are as follows:

	1940-41 (million bu.)	1941-42 (million bu.)	1942-43 (million bu.)
Total supply, October 1.....	471	496	509
Total supply, April 1.....	243	268	237
Disappearance, October to March.....	228	228	272
Carry-over, October 1.....	87	76	(?)
Disappearance, April to September.....	156	192	(?)

The stocks include figures for commercial storage, and as these have declined in the last six months, they may exaggerate farm disappearance from October 1942 to April 1943. However, the present trend is to use up commercial stocks, so the figures indicate the likely trends in the six months from April through September. The disappearance of corn in Illinois was about one-fifth larger from October 1942 to April 1943 than a year earlier. If the same rate of increase in disappearance should continue for the balance of the year, we should have a carry-over in the state, including commercial stocks, of only 7 million bushels. This would mean a total disappearance for the year of 502 million bushels. It is probable that the disappearance will be less than this and the carry-over larger because as much corn will not be marketed from farms during the balance of the season as last year, and, as farm stocks decline, farmers will economize in the use of corn.

To summarize, Illinois has been using up its corn supply faster than the nation as a whole and on April 1 had less corn on hand than a year earlier, whereas the nation had more. This primarily reflects the impact of the large commercial demand on the supplies in the cash grain areas of the state which are the most important in the country. Industries have used corn heavily and so has the feed trade.

Elevators report larger purchases. This over-all picture was confirmed by a visit to a series of country elevators on May 10-12 in the area bounded by Champaign, Morris, and Peoria. Thirteen out of 15 elevator managers contacted said they would handle less corn for the balance of the year than in the same period in 1942, when it must be remembered marketings were heavy. All elevators contacted but one had handled more corn during the current year than in the corresponding period for the past marketing year. Six, who made specific estimates, indicated that they would handle an average of two-thirds as much as last year for the balance of the season.

In spite of fixed prices, etc., Illinois farmers sold corn freely during the present season until recent bad weather, roads, and competition with field work interfered with the movement. The sales may have been spotted and bunched in response to changes in prices, but in the aggregate, a large volume was sold. Any apparent shortage, until recently, reflected the huge demand for corn, not an absence of offerings.

The future of our feed policy. The entire situation raises this question: Can our cheap feed policy be continued? If it is, what will be the consequences? Continued feeding of our wheat reserves, plus imports from Canada, plus the liquidation in livestock that occurs locally when

feed supplies get scarce, together with another good feed crop in 1943 might make it possible to continue it for another year. However, the year would be marked by increasing difficulties in effecting distribution of supplies and many bare spots would develop. With a normal and not a bumper feed crop in 1943, the situation would be very acute in many spots early in 1944.

It would seem that one or the other of two things must be done. Either, as a first alternative, feed prices must be allowed to rise to establish balances between livestock returns and costs, which farmers understand. Growing disregard of corn price ceilings in producing areas will accomplish this in many areas even if official policies are not changed. Or, as a second alternative, a systematic system of rationing feedstuffs must be worked-out, which attempts to balance quantities distributed with quantities available. Price fixing without rationing is simply impossible when demands exceed the stock available for sale. The easy way of attempting to protect consumers against price advances without also limiting quantities which they buy leads to trouble and will leave areas and individuals without supplies. But the practical difficulties of rationing feed supplies are immense. Feed is raised by farmers who in most cases are potential users. To tell a producer that he cannot use what he has produced has not yet been attempted by our rationing authorities. To ration goods they must move in channels of trade. This condition is absent in our basic feeding materials. Therefore, their rationing would be very difficult if not impossible.

It would seem that the cheap feed policy must be abandoned sooner or later and greater use made of free market mechanisms to maintain essential balances between prices of feedstuffs and of livestock products. The sooner the change is made, the sooner the balance will be established. Short feed crops in 1943 would bring the issue to a head and probably force a change in policy.

The issue is not one of parity prices for particular items, but one of essential balance within the farm price structure.

The correct policy cannot be tested solely by idealistic considerations of controlling inflation. Every intelligent and right-minded person wants to prevent excessive increases in prices. The consequences of unlimited price advances would be extremely harmful to the war effort, to consumers, and to farmers. But to attempt to hold down the prices of vital raw materials, such as feedstuffs, in the face of higher prices for the products which these raw materials are used to produce, is to attempt the impossible. It is time to face the facts and to get onto a workable basis.

L. J. NORTON

MAY RAINFALL AND CORN YIELDS

May rainfall in Illinois this year was one of the heaviest—perhaps the heaviest—of any year included in the Weather Bureau records. Corn planting has been delayed and in some quarters the opinion has been expressed that corn yields will likely be low as a result. Such an opinion is not substantiated by a study of the relationship between May precipitation and corn yields for the years 1900 to date. If corn yields should turn out to be unusually low, it will be primarily because of unfavorable weather conditions after the first of June rather than because of the heavy May rainfall. On the other hand, the heavy May rainfall will provide some protection against midsummer drought, the most common cause of low yields of corn.

Illinois precipitation data as commonly summarized are divided into three "Divisions," the Northern, Central, and Southern Divisions. Of these, the data for the Central Division are especially pertinent in their relation to corn production, since it is in the central part of the state that corn production is especially concentrated. Table 1 gives the average May rainfall for the entire state and for the Central Division compared with corn yields for the years 1900 to 1942. At the time of writing, the complete averages for 1943 are not yet available, but indications point to an average for the Central Division of from 9.5 to 10 inches.

Previous to this year the greatest May precipitation for the Central Division was in 1935 and that was a year when corn yields were better than average.

On the other hand, the lowest May rainfall on record was in 1934 and that was the year when Illinois corn yields were lower than in any year since 1887.

These are merely two instances which serve to demonstrate that Illinois corn yields are but little influenced by May rainfall. In the months of June, July, and August, on the other hand, the amount of rainfall is very important in affecting yields. In those months, however, yields are likely to be cut by too little rather than too much rain. If, in those months, the rainfall is much less than average, yields are likely to suffer, especially if July and August are also unusually hot.

For the years 1890 to 1940 the May average or "normal" rainfall for the state has been 4.00 inches, whereas for the Central Division it has been 4.06 inches. Prior to this year and during the current century there have been only 6 years in which either the state or the Central Division precipitation has exceeded normal by more than 50 percent. These years are starred in Table 1, and it will be noted that for four of them, 1908, 1915, 1929, and 1935, the corn yield was 35 bushels per acre or more.

TABLE 1.—MAY PRECIPITATION AND CORN YIELDS IN ILLINOIS,
1900 TO 1942

Year	Corn yield	May precipitation		Year	Corn yield	May precipitation	
		Central Division	State			Central Division	State
	(bu.)				(bu.)		
1900.....	40	4.06	4.22	1922.....	35.5	3.42	3.59
1901.....	24	1.93	1.89	1923.....	37.5	4.24	4.38
1902.....	41	3.23	4.18	1924.....	33	3.64	3.53
1903.....	35.5	2.94	3.19	1925.....	41	1.24	1.38
1904.....	39	3.72	3.41	1926.....	36	2.43	2.24
1905.....	42	3.90	4.41	1927 ^a	32	7.55	6.96
1906.....	39	2.96	2.70	1928.....	38	3.03	2.55
1907.....	39	3.45	4.02	1929 ^a	35.5	7.24	5.80
1908 ^a	35	8.47	7.76	1930.....	26.5	1.64	1.84
1909.....	38.8	4.84	4.01	1931.....	37	4.57	4.24
1910.....	41	5.94	4.96	1932.....	43	2.03	2.39
1911.....	36	1.62	1.92	1933 ^a	27	7.95	7.99
1912.....	40	3.76	3.84	1934.....	21.5	.73	1.06
1913.....	28	1.58	3.09	1935 ^a	38.5	9.24	7.78
1914.....	31	1.65	2.30	1936.....	23.5	2.48	2.07
1915 ^a	38	7.24	6.99	1937.....	48.0	3.00	3.23
1916.....	31	5.58	4.65	1938.....	45	5.15	5.14
1917.....	40	4.77	4.22	1939.....	52	2.16	2.43
1918.....	36.5	4.82	5.21	1940.....	43	3.51	3.28
1919.....	36	5.10	5.22	1941.....	53.0	2.98	3.09
1920.....	35	5.10	4.99	1942.....	54.5	4.38	4.20
1921.....	35	2.05	2.09	1943.....	...	(9.7) ^b	....

^aYears in which precipitation exceeds 6.00 inches.^bRough estimate.

(Prior to the last few years when hybrid corn has become widely used, 35 bushels per acre was approximately the long-time average yield.)

In only two of the six years of heavy May rainfall were corn yields materially below average. Those two years were 1927 and 1933. They and the year 1924 deserve special consideration, and pertinent rainfall and temperature data for several months of these years are given in Table 2.

It will be noted that in 1933 there was a severe drought during June and July. This drought, rather than heavy May rainfall, was the cause of the low yield. Indeed, the rainfall for the months June to August of 1933 was less than in the corresponding months of 1934 and only a little more

TABLE 2.—PRECIPITATION AND TEMPERATURE, SELECTED MONTHS AND YEARS,
CENTRAL DIVISION OF ILLINOIS

	Precipitation, inches				Mean temperature, degrees F.				
	May	June	July	August	May	June	July	August	Sept.
Normal.....	4.06	3.90	3.31	3.34	63.1	72.4	76.7	74.7	68.1
1924.....	3.64	6.80	3.05	4.75	56.9	70.5	72.1	74.7	62.1
1927.....	7.55	4.21	3.76	3.64	61.6	68.0	74.6	69.0	71.2
1933.....	7.95	1.48	1.32	3.07	64.9	78.5	79.0	74.0	73.9

than in those months of 1936. Had it not been for its heavier precipitation in May, 1933 would probably have had a corn yield about as low as those of 1934 and 1936.

In 1927 the wet May was followed by somewhat heavier than normal rains in June, July, and August. Furthermore, each of the months May to August was cooler than normal. Under such conditions the cold and wet May combined with the cold and wet weather of the other months resulted in moderately low yields.

The other year which deserves attention for comparison is 1924. In that year May precipitation was somewhat less than average, but June rainfall was unusually heavy. Unseasonably cool weather continued in June and July. Finally there was a very cool September.

This review of May rainfall in relation to yields indicates that on the basis of past experience there is little chance that the heavy rains of May will be followed by seriously reduced corn yields. It is very seldom that Illinois weather after June 1 is so cool and wet that the late start will seriously affect yields. It has been much more common for yields to be seriously reduced by drought than by a cold wet summer. Consequently, the heavy rains of May could well be looked upon as insurance against a crop failure due to drought rather than as a likely factor contributing to low yields in 1943. Only in the event of a cool wet summer or an early frost is the heavy rainfall of May likely to contribute to a short corn crop in Illinois.

E. J. WORKING

RURAL YOUTH MIGRATION AND POSSIBLE EFFECTS ON LABOR SUPPLY IN RANDOLPH COUNTY, ILLINOIS

Induction into military service was the chief reason for the movement of two-fifths of the rural youth in Randolph County, Illinois, in the period from January 1941 to January 1943. This included the movement of rural youth within the county as well as from the county to some other place. This movement was shown by a check-up study of the present location and occupation of 1,048 rural youth on whom information was secured two years ago. Fewer young men remained on farms in 1943 than in 1941.

The study showed movement within the county as well as from the county. Over half of all young men who moved either within or out of the county between 1941 and 1943 entered military service; two-thirds of those who left the county went into the armed services. One-fourth of all young men moving went to towns and cities; only one-tenth moved to other farms. Of the migrating young women, two-thirds moved to towns

TABLE 1.—DESTINATION OF RURAL YOUNG MEN IN RANDOLPH COUNTY BY AGE GROUP WHO MOVED BETWEEN JANUARY 1941 AND JANUARY 1943

Age	Total number	Total migrants	Entered armed services		Went on to farms		Went to towns or cities*	
			Number	Percent	Number	Percent	Number	Percent
All ages	621	269	144	100.0	31	100.0	94	100.0
18-19	♦ 144	63	38	26.4	2	6.4	23	24.5
20-23	202	109	66	45.9	11	35.5	32	34.0
24-27	167	63	30	20.8	11	35.5	22	23.4
28-30	108	34	10	6.9	7	22.6	17	18.1

*Includes destination unknown.

and cities; only about one-tenth moved to other farms. Both young men and young women moved in larger proportions from the rural towns and villages than from the farms.

The heaviest movement of young men occurred among those who were 20 to 23 years of age in 1941; 54 out of each 100 in this age group moved. Less than one-third of the young men who were between 28 and 30 years of age in 1941 had moved by January 1943 (Table 1). In the case of young women, movement was greatest in the 18- to 19-year age group.

Fewer take up farming. There was a considerable drop in the number making moves who took up farming when comparing the data in 1943 with those in 1941. Only one-tenth of the young men who had moved between 1941 and 1943 expected to farm elsewhere, whereas about two-thirds of those moving in 1941 took up farming in some other section.

Although a large percentage of those who migrated went into non-farm occupations (this was especially true of young women), only a few went into defense work; about 5 percent of the young men and 3 percent of the young women had defense jobs in 1943. Almost one-third of the young men not in the armed services or on farms, on the other hand, were in nondefense work; one-half of the young women were wives of nonfarm workers, and over one-fifth were in nondefense work. Most of the employment in nondefense work was in industries close to the homes of the rural youth, and there was evidence of considerable driving from home to nondefense jobs in the larger towns.

Out of the total number of young people in the country, both those who moved and those who didn't move, the number of young men who became renters and young women who became renters' wives doubled in the two-year period. The number of young men, also, who became part-

ners with their fathers doubled in the two years. Farm young people were evidently elevated rapidly from family helpers or paid laborers to partners and renters in this wartime period.

Most of the rural youth of the county who migrated have married since 1941; this is particularly the case for young men, 70 percent of whom have married since 1941. About half the migrating young women have married since 1941. Of all youth who were married, almost two-thirds of the young men and three-fourths of the young women had one or more children; in other words, most marriages took place before our entry into the war.

Extent of schooling had little effect on migration. Slightly more of those who completed the eighth grade migrated than those who had gone further in school.

Almost half (48.1 percent) of the young men left small farms, 70 acres or smaller; two-fifths of those on large ones, over 219 acres, left. This was not true for young women for only a fourth on small farms left compared with a third on large farms.

Possible effects on production. Production will be affected adversely by reason of the migration of more than one-fourth of the youth. Fifteen percent of those leaving in 1942 had already affected production, and an additional 12 percent leaving in 1943 are likely to affect production since their places were not filled adequately by others. Most families having youth move away reported no one to take their places. Places which were left by young men leaving the farms were usually filled by younger brothers and sisters. Over 70 percent of the places left by young women were taken by no one.

In general, the migration of youth leaving the farms in Randolph County to enter military service and other occupations was sufficiently severe in the period 1941 to 1943 to cause considerable concern among the farmers of the county as to where they would get labor to replace those who had left. Many adjustments are being made, however. A large number of youth were getting married and establishing themselves on rented farms or on their fathers' farms as partners. Many, especially young women, were staying at home and driving back and forth to work in factories. These will doubtless help out on the farm in rush seasons. Interviewers found considerable evidences of plans for neighborhood or trade-work cooperation, but there was evidence that if there was as great a drain of the youth in the next two years as in the past two years, agricultural production in the county would suffer seriously.

D. E. LINDSTROM

ILLINOIS TOWNSHIPS AND THEIR LAND VALUES

Owners and prospective owners of farmland are better guided in their purchases, sales, and other transactions, and in their judgment of the soundness of land taxes and debts when informed as to how local farm operators have valued at some recent date the property in question and the neighboring properties. By using census results for April 1940 for townships, and by allowing for increases between that date and March 1943, some important results can be obtained. One of these has to do with the differences that have existed among townships in the same or adjoining counties. Another has to do with the effects produced by three years of war on the average township and other areas in Illinois as compared with the United States as a whole and some adjoining states.

Let us examine first how much farm real estate value is found in representative areas in Illinois as compared with the country as a whole.

TABLE 1.—SOME VALUE AND AREA COMPARISONS, UNITED STATES AND ILLINOIS, CENSUS, 1940 AND ESTIMATES, 1943

	United States	Illinois	Ratio:— Ill.:U.S.
<i>Areas</i>			(percent)
Total area* (sq. mi.)	3 022 387	55 947	...
Total area (acres)	1 905 361 920	35 806 080	1.8
Farmland (acres)	1 060 852 574	31 032 572	2.9
<i>Division</i>			
Counties (number)	3 198	102	3.2
Average area (sq. mi.)	945.0	548.5	...
Same (acres)	595 798	351 040	58.9
Townships ^b (number)	51 627	1 638	3.2
Average area (sq. mi.)	58.5	34.2	...
Same (acres)	36 906	21 854	59.2
<i>Values of farmland and buildings</i>			
Total			
1943 (Est.) (millions)	\$39 697	\$ 3 078	...
1940 (millions)	33 642	2 537	7.5
County average			
1943 (Est.) (thousands)	\$12 413	\$30 318	...
1940 (thousands)	10 520	24 874	236.4
Township average			
1943 (Est.) (thousands)	\$ 769	\$ 1 874	...
1940 (thousands)	652	1 549	237.5
Square mile average			
1943 (Est.)	\$13 133	\$55 019	...
1940	11 130	45 348	407.4
Farm acre average			
1943 (Est.)	\$ 37.42	\$ 99.19	...
1940	31.71	81.76	257.8

*The area of continental or mainland United States is shown here excluding 74,564 square miles in primary bodies of water but including 42,254 square miles of inland water area.

Outside of continental United States are areas in square miles as follows: The Philippines, 115,600, and territories and possessions, 597,257.

^bIncluded in Illinois with 1,444 civil townships in 87 counties are one independent municipality and in 15 counties, 193 election precincts in place of townships.

Included in the United States are 20,487 civil townships, 503 judicial townships, 2,175 surveyed townships, 10,819 election precincts, 1,437 justices' precincts, 96 commissioners' precincts, and four classes of independent municipalities, namely, boroughs 1,190, cities 1,341, towns 586, and villages 1,223. In addition, there are 28 other types of minor civil divisions recognized as primary subdivisions of counties in the United States as a whole. Of the minor civil divisions in the United States, over four-fifths bear designations as townships, precincts, or independent municipalities not unlike those found in Illinois. To learn for each state the distribution of its minor civil divisions among 38 different types or designations, see Bureau of the Census, *Areas of the United States, 1940*, Tables VII and 3.

TABLE 2.—SOME VALUE AND AREA COMPARISONS, ILLINOIS, IOWA, MICHIGAN, AND WISCONSIN, CENSUS, 1940 AND ESTIMATES, 1943

	Illinois	Iowa	Michigan	Wisconsin
<i>Areas</i>				
Total area ^a (sq. mi.).....	55 947	55 986	57 022	54 715
Total area (thousand acres).....	35 806	35 831	36 494	35 018
Farmland (thousand acres).....	31 033	34 149	18 038	22 876
<i>Divisions</i>				
Counties (number).....	102	99	83	71
Average area (sq. mi.).....	548.5	565.5	687.0	770.6
Same (acres).....	351 040	361 930	439 688	493 206
Townships ^b (number).....	1 638	1 676	1 435	1 794
Average area (sq. mi.).....	34.2	33.4	39.7	30.5
Same (acres).....	21 854	21 379	25 431	19 519
<i>Values</i>				
State total				
1943 (Est.) (millions).....	\$ 3 078	\$ 3 163	\$ 1 153	\$ 1 302
1940 (millions).....	2 537	2 691	913	1 189
County average				
1943 (Est.) (thousands).....	\$30 318	\$33 422	\$13 890	\$18 335
1940 (thousands).....	24 874	27 179	10 994	16 740
Township average				
1943 (Est.) (thousands).....	\$ 1 874	\$ 1 887	\$ 804	\$ 726
1940 (thousands).....	1 549	1 606	636	663
Square mile average				
1943 (Est.).....	\$55 019	\$56 498	\$20 217	\$22 384
1940.....	45 348	48 062	16 003	20 443
Farm acre average				
1943 (Est.).....	\$ 99.19	\$ 92.57	\$ 64.40	\$ 57.04
1940.....	81.76	78.79	50.59	51.96

^aIncluded are inland water areas in square miles as follows: Illinois, 453; Iowa, 294; Michigan, 1,194; and Wisconsin, 1,439; but excluded are areas in primary bodies of water, in square miles as follows: Illinois (Lake Michigan), 1,526; Iowa, 0; Michigan (Lakes Erie, Huron, Michigan, St. Clair, and Superior), 38,575; and Wisconsin (Lakes Michigan and Superior), 10,062.

^bIncluded are the following primary subdivisions of counties in addition to the civil townships: Independent municipalities, Illinois and Iowa, one each; Michigan, 165; and Wisconsin, 149 cities and villages; and election precincts, Illinois, 193.

Values in areas of Illinois versus United States. The farmland and farm buildings in an average township in Illinois have an estimated 1943 value of \$1,874,000, an increase of 21 percent over 1940 (Table 1). This is $2\frac{1}{2}$ times the corresponding figures for the average township in the entire country. The average county of the entire country has 16 townships, as does Illinois. Thus, the farmland and buildings in an average county in Illinois, with its estimated 1943 value of \$30,318,000, was again $2\frac{1}{2}$ times that of the average county throughout the nation.

The average square mile of Illinois, however, was worth four times the average square mile of the country as a whole. This is a result of the fact not only that the average farm acre of Illinois was worth 2.6 times the average farm acre in the country as a whole, but that a square mile in Illinois contains 557 acres of farmland, while a square mile in the country as a whole contains only 358 acres of farmland. Farmland averages nearly \$52 more per acre in Illinois than in the country as a whole (\$99 compared with \$37).

Illinois compared with nearby states. We may next note how the values in Illinois compare with those in three near-by states, Iowa,

Michigan, and Wisconsin, all four being of similar land area. In Iowa a larger proportion of the land area is in farms than in Illinois (95 percent compared with 87 percent), while still smaller proportions are in farms in Wisconsin (65 percent) and Michigan (49 percent). Because only 32 acres in each square mile in Iowa are in nonfarm use while 83 acres in each square mile in Illinois are so used, Iowa, with lower values of farmland and buildings per acre in farms than Illinois, has larger values per square mile, per township, and per county (Table 2).

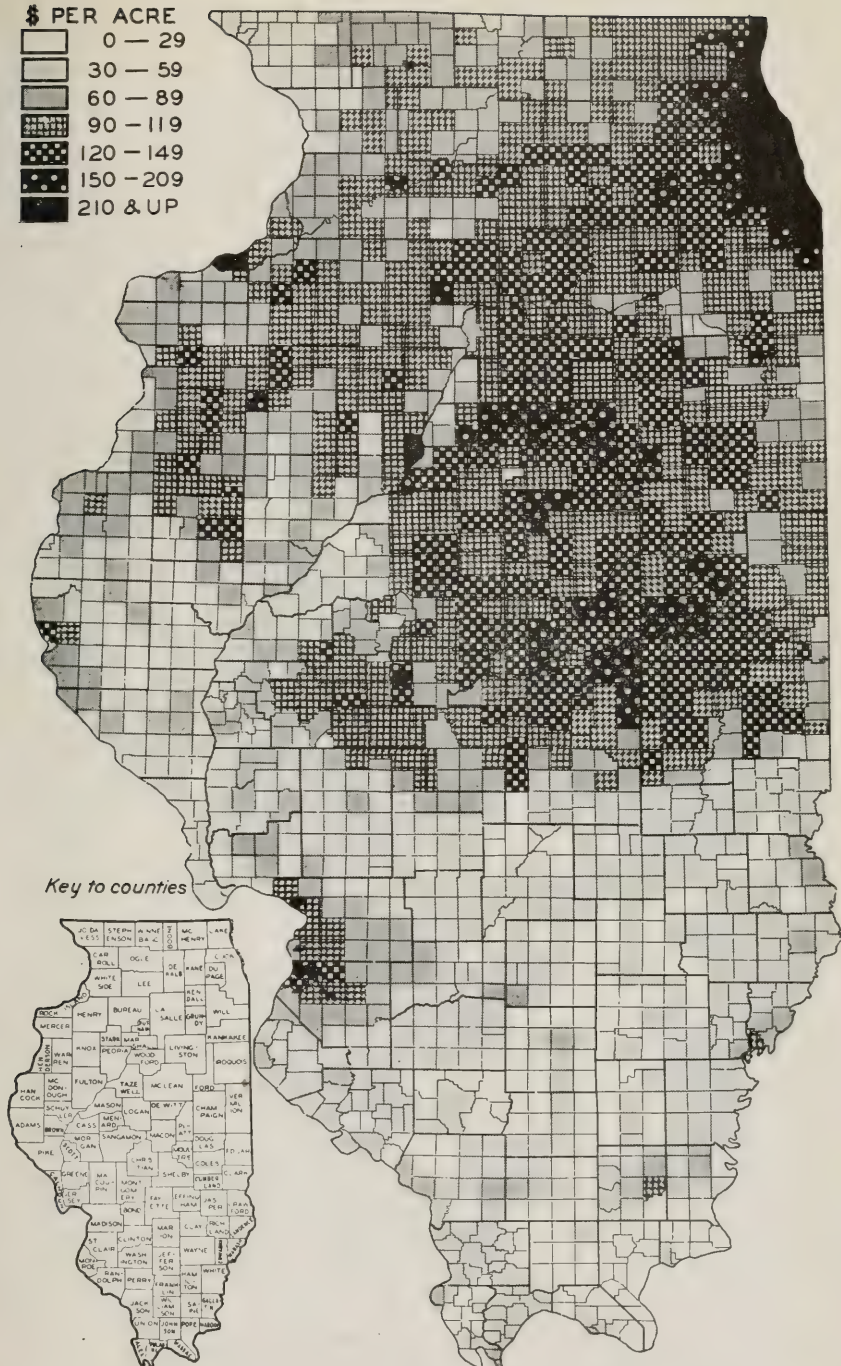
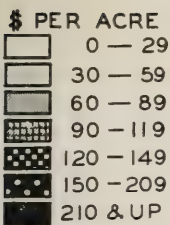
The farm real estate in an average Illinois or Iowa township is valued at about $2\frac{1}{2}$ times that of a Wisconsin township and about $2\frac{1}{4}$ times that of a Michigan township. An average township in Michigan had values less than those of the average township in the country in 1940, but advanced by about a fourth in three years, taking rank above Wisconsin in 1943.

Considering only land in farms, the average acre in Illinois in 1943 with its average value estimated at \$99 is between \$6 and \$7 more than in Iowa, nearly \$35 more than in Michigan, and \$42 more than in Wisconsin.

How Illinois township values differ. How strikingly the values of farmland and buildings per acre in farms have differed from township to township within the state is shown in the map recently completed for 1940 at the Illinois Agricultural Experiment Station (Fig. 1). This map can be compared with a similar one for 1930 in Illinois Bulletin 399 and, for nine Illinois counties and some counties in adjoining states for 1925, in E. A. Duddy, "Agriculture in the Chicago Region" (University of Chicago Press, 1929).

The 1940 map, no less than those for earlier dates, shows concentration of townships with high values per acre of farmland and buildings in Cook County and some near-by counties where Chicago influence is found, and in isolated townships containing or adjacent to Peoria, Rock Island, East St. Louis, Springfield, Bloomington, and other cities. Next in prominence are the townships in the Early Wisconsin glaciation marked on the south by the Shelbyville morainal areas. The broken region along the Illinois River is reflected in lower values.

Illinois townships with average values per acre under \$15 in 1940 were as follows: Monroe Township, Monroe County, \$12.45; Tunnell Hill Township, Johnson County, \$14.31; and Lake Creek Township, Williamson County, \$14.97. All three of these townships of lowest values per acre are in Southern Illinois, the latter in the Ozark uplift. These averages are less than one-tenth of those found in some nonurban townships in Central Illinois, and less than one-twentieth of those in which city influence has been active.



Key to counties



FIG. 1.—VALUE OF LAND AND BUILDINGS, ILLINOIS, 1940

Township differences within a county. Only a few Illinois counties have such great uniformity that the average for the county is a close indication of the average of all of the townships. In Kendall the township with lowest average value per acre was only \$16 under the township of highest average value, a difference of about 10 percent. The lowest absolute difference between the high and low townships in any county was in Clay, where all townships had average values within \$10, but, because of low values in Clay County, this spread was about 30 percent of the county average.

On the other hand, in Cook County the difference was \$21,665 or 8.670 percent of the county average. Five other counties with wide differences between townships, with the amount and percentage of difference, are as follows: Sangamon, \$4,993 (4.693 percent); St. Clair, \$1,196 (1.610 percent); Lake, \$1,107 (615 percent); Rock Island, \$590 (686 percent); and Madison, \$579 (809 percent). In these counties, as in Cook County, urban influence has produced very high values for some of the land included in farms. Counties in which glacial conditions give a difference in basic soil conditions between townships are also to be included with those in which urban effects are noted. In these counties also township averages are essential to clear understanding of what the more local situations are likely to be.

The last three years have doubtless seen these differences in values between high-valued and low-valued townships made still larger in many of the counties.

Bringing value facts to more local basis. In Illinois, as in other states known to have even more widely diverging soil and topographic conditions, township figures on land values are helpful to farmers and others. From the next census or from other sources, it would be desirable to have made available average values of farm real estate by country school districts or other small areas as well as by townships. It would enable prospective purchasers living at a distance to be on their guard against paying prices based on impressions concerning other land in the county or township rather than the actual land being considered.

The Bureau of the Census makes it clear that it gathers statistics for uses other than laying taxes on farmland. Publication of census figures for areas as small as country school districts may need to be avoided for that reason. In due course, perhaps, a scientific valuation of all land can be made for a single year by special appraisers. Average figures for very

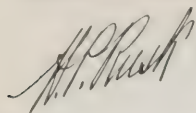
local areas might thus become available. One result might be more equitable taxes on real estate. In addition to benefits to taxpayers, benefits should come to buyers and sellers of farmland, to borrowers, lenders, and many others. Unenlightened pricing of land and insufficiently localized information about land values and what they rest upon are pitfalls for an individual and the public alike.

C. L. STEWART

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Department of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1942 inclusive, from special mimeographed release by Bureau of Agricultural Economics; currently, not adjusted for seasonal variation from Poultry and Egg Situation, beginning with March, 1943, issue. ⁹Survey of Current Business, December, 1942 and subsequent monthly issues, unadjusted for seasonal variation. Prior to 1939, "factory payroll" index, with 1923-1925 base, multiplied by 1.087 to obtain the "Weekly Wages" index with 1939 base. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Circular 438; Monthly price releases, State Agricultural Statistician.



Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Weekly wages, all manufacturing industries, unadjusted ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period..	1926	1926	1924-29	1924-29	1924-29	1924-29	1924-29	1935-39	1939	1935-39
1929.....	95	105	104	99	103	103	104	121	120	110
1930.....	86	88	89	94	83	87	93	110	98	91
1931.....	73	65	62	80	58	58	72	93	74	75
1932.....	65	48	41	69	43	43	62	72	51	58
1933.....	66	51	45	71	49	51	72	68	54	69
1934.....	75	65	61	80	57	55	69	79	70	75
1935.....	80	79	82	81	64	65	80	86	80	87
1936.....	81	81	86	80	74	82	103	98	93	103
1937.....	86	86	96	84	80	87	103	107	111	113
1938.....	79	69	69	80	72	81	101	101	85	89
1939.....	77	65	65	78	72	81	97	108	100	108
1940.....	78	68	69	79	78	90	113	118	114	123
1941.....	87	82	87	85	101	116	135	144	168	156
1942 Apr....	99	104	111	98	136	143	146	175	221	173
May.....	99	104	112	99	130	144	145	180	229	174
June.....	99	104	110	99	131	149	150	187	234	176
July.....	99	105	111	99	132	125	126	188	243	178
Aug.....	99	106	115	99	146	128	129	193	255	183
Sept.....	100	108	114	99	148	138	139	198	262	187
Oct.....	100	109	116	100	151	259	259	205	271	191
Nov.....	100	110	115	101	160	191	191	209	280	194
Dec.....	101	114	118	102	162	184	180	215	288	197
1943 Jan....	102	117	124	104	160	168	162	215	291	199
Feb.....	102 ¹¹	119	128	104	172 ¹¹	177	170	219	297	202
Mar.....	103 ¹¹	123 ¹¹	131	104	...	...	...	224	...	203 ¹¹
Apr.....	104 ¹¹	124	132	105 ¹¹	...	...	...	...	...	...

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			May 1942	Current months		
	1924-29	1941	1942		March	April	May
Corn, bu.....	\$.81	\$.63	\$.77	\$.78	\$.94	\$.98	\$.99
Oats, bu.....	.42	.36	.48	.52	.60	.62	.61
Wheat, bu.....	1.30	.93	1.13	1.10	1.36	1.36	1.36
Barley, bu.....	.66	.55	.74	.78	.85	.88	.88
Soybeans, bu.....	1.94	1.24	1.65	1.68	1.64	1.64	1.65
Hogs, cwt.....	9.97	9.37	13.37	13.40	14.90	14.50	14.00
Beef cattle, cwt.....	8.57	10.07	11.93	11.90	13.90	13.80	14.00
Lambs, cwt.....	12.22	9.85	12.28	12.20	14.20	14.20	14.20
Milk cows, head.....	78.00	80.00	102.00	100.00	130.00	132.00	135.00
Veal calves, cwt.....	11.27	11.19	13.63	13.40	15.40	14.20	14.60
Sheep, cwt.....	6.52	4.43	5.50	6.10	7.00	7.50	7.30
Butterfat, lb.....	.42	.33	.39	.37	.48	.50	.49
Milk, cwt.....	2.32	2.05	2.40	2.20	2.90	2.85	2.85 ¹¹
Eggs, doz.....	.30	.22	.29	.26	.33	.33	.33
Chickens, lb.....	.21	.15	.19	.19	.23	.24	.24
Wool, lb.....	.36	.37	.40	.43	.41	.41	.43
Apples, bu.....	1.59	1.07	1.53	2.10	2.20	2.60	2.75
Hay, ton.....	13.88	8.49	11.33	12.60	13.80	14.50	14.70
Potatoes, bu.....	1.39	.82	1.32	1.60	1.70	2.20	2.55

¹¹⁻¹²For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

College of Agriculture

University of Illinois

Department of Agricultural Economics

G. L. Jordan, Editor

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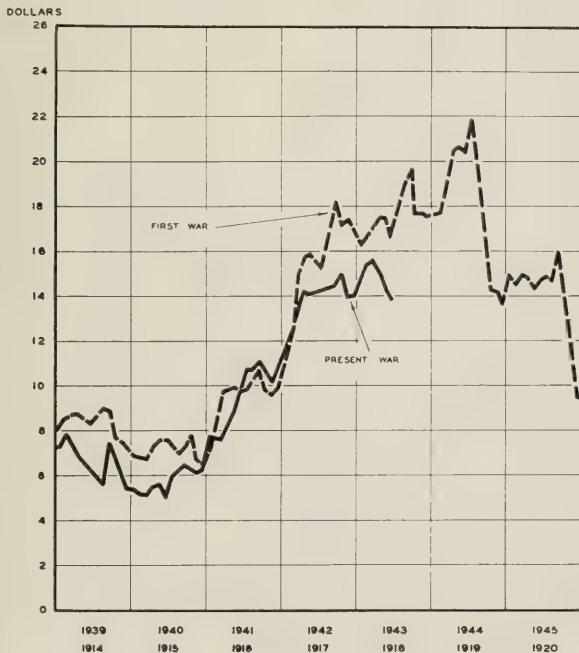


FIG. 1.—HOG PRICES AT CHICAGO DURING TWO WORLD WARS

Hog prices have followed a somewhat similar course during the two world wars. However, the percentage increase from 1939 to 1942 was considerably greater than that from 1914 to 1917.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

THE HOG SITUATION — BACKGROUND DEVELOPMENTS

Summary. For three years in succession hog prices have risen rapidly. They have been high relative to corn prices in all but one of the past five calendar years. Thus far during this sixth year the hog-corn price ratio has continued high. This price situation has been a primary cause of a tremendous increase in both the number of hogs raised and the average live weight at which they have been marketed. Our once abundant corn supplies have been disappearing rapidly, and it will not be possible to feed the 1943 pig crops as heavily as those of recent years and still have sufficient grain for the dairymen, poultry raisers, and for industrial use.

Hog prices and the hog-corn ratio. The course of hog prices at Chicago from 1939 to date is shown in Figure 1. It will be noted that prices have followed roughly the same course as they did during the corresponding period of the first World War. The percentage increase, however, has been greater during the current war. From 1939 to 1942, prices rose 108 percent, whereas the increase from 1914 to 1917 was 80 percent. Farm product prices as a whole have not advanced quite as rapidly during the current war as during the first World War. This was indicated by the chart on page 451 of the April issue of *Illinois Farm Economics*. Corn prices in particular have advanced much less rapidly than during the corresponding period of World War I.

Except for a period of 13 months from December 1939 to December 1940, the Illinois hog-corn ratio has been continuously above average for a period of nearly six years. This is shown by Figure 2. Such a long period of price relationships favorable to hog production is without precedent. Favorable ratios have seldom persisted for more than two years without interruption, and never before have two long periods of highly favorable ratios been interrupted by so short a period of unfavorable ratios. There is no doubt that the continued favorable price relationships for hog feeding have been a tremendous stimulus to hog production. They have tended to increase hog production both through larger pig crops and through heavier market weights.

The increase in supplies. The average weight of hogs marketed has been increasing rapidly, each of the past four years having marked a new record high in the live weight of all hogs slaughtered under federal inspection — a series which goes back to 1921. This United States average weight in 1942 was 245 pounds compared with a 1921-1939 average of 229 pounds. At Chicago the 1942 average live weight of 262 pounds was also the highest on record, and the record as compiled by the Chicago Daily Drovers Journal goes back to 1876. Thus far, during the current

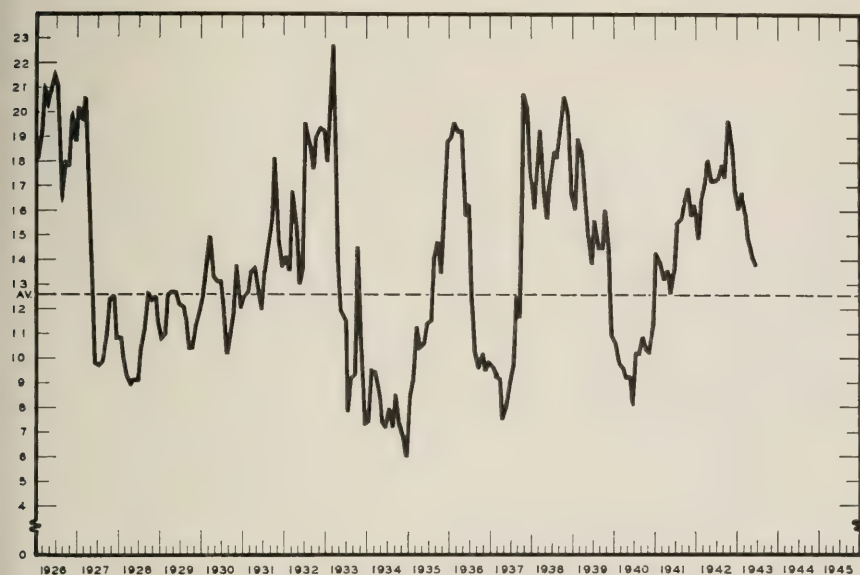


FIG. 2.—ILLINOIS HOG-CORN PRICE RATIO

In recent years the hog-corn price ratio has been unusually favorable. Since September 1937 there have been only 13 months in which the ratio has not been above the long-time average. Recent declines are tending toward a more balanced situation.

year weights have been higher than in the corresponding months of last year. The pertinent figures for Chicago are as follows:

AVERAGE LIVE WEIGHT OF BARROWS AND GILTS AT CHICAGO

Month	1942	1943	Month	1942	1943
January.....	238	245	July.....	243	...
February.....	243	249	August.....	246	...
March.....	245	253	September.....	235	...
April.....	251	257	October.....	229	...
May.....	252	257	November.....	233	...
June.....	249	257	December.....	238	...

The extent to which the pig crop has been increasing in response to the favorable price relationships and to the government's appeals for greater hog production is indicated by the upper line of Figure 3. The pig crop of 1942 far exceeded that of any previous year, and preliminary indications point to a total 1943 pig crop of about 127 million, which would be about half again as many pigs as have been saved in any of the years prior to 1942.

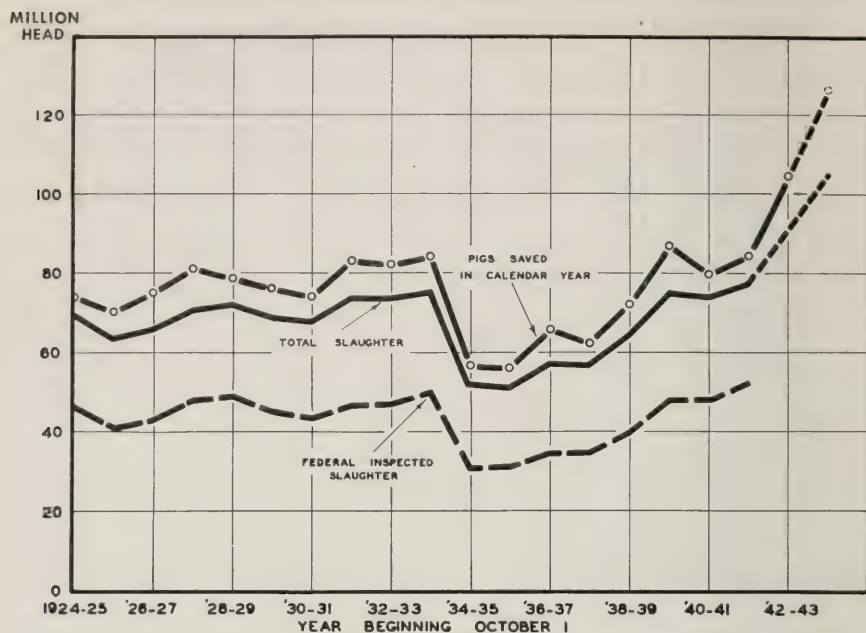


FIG. 3.—PIGS SAVED AND HOG SLAUGHTER

Total hog slaughter follows closely the changes in pig crops. The pig crop of 1942 was the largest on record but that for 1943 will be still larger. The prospective total pig crop of 1943 and slaughter for 1942-43 and 1943-44 are indicated in the dotted lines.

The full effect of the larger pig crops has not yet been felt in marketings. As indicated by the dotted portion of the middle line of Figure 3, however, total slaughter for the 1942-43 season is expected to be about 90 million head and in the year October 1943 to September 1944 it may well amount to about 105 million. Federally inspected slaughter from October through May of the current marketing year was 10 percent larger than in the corresponding months of the previous year.

Effects on corn supplies. Such great increases in hog production have, of course, been obtained by increased feeding of corn to hogs. Unfortunately, we do not have data adequate to indicate just how much corn is currently being fed to hogs. All indications are, however, that the rate of feeding is the greatest in history. Not only is the number of pigs to be fed the largest, and the average live weight of market hogs the highest, but the amount of feed currently being used per hundred weight of pork produced is probably one of the highest of recent years.

As was indicated by Norton in the May-June issue of *Illinois Farm*

Economics (page 461-4), the corn situation is extremely tight. It is difficult to buy sufficient corn in the corn belt to meet the urgent needs of industries and of farmers outside the corn belt.

The primary reason for the scarcity of market supplies is that most corn raisers of the corn belt have been able to make more money by feeding their corn to hogs than by selling it in line with current ceiling prices imposed by the OPA. In 1942 on the Illinois Farm Bureau Farm Management Service farms,¹ the net earnings of specialized hog farms were much above those of grain farms. The pertinent figures of rate earned on investment are as follows:

Major Source of Income	Average rate earned on investment (percent)
Grain, 60% or more of total income.....	14.7
Grain, 40-59% of total income.....	14.8
Hogs, 60% or more of total income.....	22.4
Hogs, 40-59% of total income.....	18.8
Cattle, 40% or more of total income.....	15.8
Dairy, 40% or more of total income.....	13.1

Earnings of these farms were higher than in any of the previous 18 years the project has been carried on and higher than the average of all farms in the area. A considerable part of the earnings is represented by increased values of livestock and crops on hand. Farm earnings were high because of abnormally high crop yields throughout the area in 1942 as well as because of good prices.

The principal reason for the relatively high earnings of the hog farms in 1942 can be indicated by finding what percentage the 1942 hog-corn ratio was of the long-time average ratio, and comparing this with similar percentages for the other livestock-feed ratios in 1942. The 20-year period, 1922 to 1941, is used for the long-time averages. The length of the period is sufficient to assure a fairly satisfactory basis of comparison in spite of the differing length of "cycles" which some of the original series contain.

The first column of figures in the table on page 482 shows the percentage relation of each of the livestock-feed price ratios in 1942 to the 1922-1941 average. It will be noted that all but two of the ratios were above average in 1942, but that the three hog-corn ratios were far higher relative to the average than any of the others. It was primarily because the hog-corn ratio was so much more favorable than the others that hog farming in northern Illinois was relatively more profitable in 1942 than other types of livestock farming.

¹Mosher, M. L. and others, *Eighteenth Annual Report of the Farm Bureau Farm Management Service*, 1942 (mimeographed, pp. 12-13).

INDEXES OF LIVESTOCK-FEED PRICE RATIOS

Ratio	Year 1942, % actual is of 1922-41 average	June, 1943, % actual is of 1922-41 June average
Hog-Corn, U. S.	141	120
Hog-Corn, North Central States	136	113
Hog-Corn, Chicago	141	113
Beef-Corn, Chicago	119	108
Butterfat-Feed, U. S.	99	107
Milk-Feed, U. S.	107	117
Egg-Feed, U. S.	104	123
Chicken-Feed, U. S.	62	96

Under ordinary conditions the needed readjustment would take place with the stimulus of some increase in corn prices and sharply lower hog prices. There has been a marked increase in corn prices, but under various pressures, including highly inflationary methods of wartime finance and the greatly expanded purchases for shipment abroad, hog prices instead of declining have risen rapidly. (Declines of the past three months have been a little more than the normal seasonal.) Furthermore, and in spite of an ostensible Administration policy of direct price controls to prevent inflation, a series of increasing "support prices" have been announced by the Department of Agriculture. First there was a support price of \$9.00, then 85% of parity, then 90% of parity, then \$13.25, and finally in early April the support price was raised to \$13.75.

The relationship between the various livestock prices was much better balanced in June 1943 than for the year 1942. This is indicated by the greater uniformity of percentages in the last column of the table.

E. J. WORKING

RECENT CHANGES IN FEED AND LIVESTOCK PRODUCTION ON CORN-BELT FARMS

The splendid response of farmers to the wartime request for increased production of essential products is shown by comparing the production of feed, livestock, and livestock products on farms enrolled in the Farm Bureau Farm Management Service during the three years of 1940, 1941, and 1942. The 430 farms used in this study were operated by the same men and were of the same size during all three years. They are located in 23 counties in the heart of the corn belt across north-central Illinois. About one-half of the farms are in the cash grain area of eastern Illinois and about one-half in the beef cattle and hog area of western Illinois.

TABLE 1.—PRODUCTION OF FEED AND LIVESTOCK PER FARM ON THE SAME 430 FARMS IN NORTH-CENTRAL ILLINOIS DURING 1940, 1941, AND 1942

Product	Quantities produced per farm			Percentage change		
	1940	1941	1942	1940 to 1941	1941 to 1942	1940 to 1942
<i>Feed</i>						
Grain—tons.....	182.1	223.1	242.2	+22.5	+8.6	+33.0
Corn silage—tons.....	20.8	21.8	20.6	+4.8	-5.5	-1.0
Hay—tons.....	49.3	52.9	51.0	+7.3	-3.6	+3.4
Pasture—days per animal unit.....	5 518	6 251	5 951	+13.3	-4.8	+2.8
Total digestible nutrients—tons ^a	219.6	261.4	274.4	+19.0	+5.0	+25.0
Index of total production.....	100.0	119.0	125.0	+19.0	+5.0	+25.0
<i>Livestock and livestock products</i>						
Hogs—tons.....	16.0	19.1	22.2	+19.4	+16.2	+38.8
Cattle—tons.....	9.0	10.0	9.6	+11.1	-4.0	+6.7
Sheep—tons.....	.8	.8	.6	± 0.0	-25.0	-25.0
Poultry—pounds.....	678	1 081	938	+58.8	-13.0	+38.3
Milk—tons.....	23.7	24.7	24.8	+4.2	+4.4	+4.6
Eggs—dozens.....	1 158	1 335	1 544	+14.6	+15.8	+33.3
Value per farm of livestock and livestock products at 1930 to 1941 prices ^b	\$4 781	\$5 471	\$5 842	+14.4	+6.8	+22.2
Index of total production.....	100.0	114.4	122.2	+14.4	+6.8	+22.2
<i>Use of labor</i>						
Number of men working.....	1.93	1.99	2.06	+3.1	+3.5	+6.7
Total tons of digestible nutrients produced per man.....	113.8	131.4	133.2	+15.5	+1.4	+17.0
Total value of livestock and livestock products at 1930 to 1941 prices produced per man.....	\$2 477	\$2 749	\$2 836	+11.1	+3.2	+14.5

^aData from Morrison's "Feeds and Feeding" were used to calculate digestible nutrients in grain, hay, and silage. Seventeen pounds per day of pasture were used to convert pasture days into digestible nutrients; 17 pounds per day being the author's estimate based on various data.

^bThe value per farm of all livestock and livestock products calculated by using average prices over a long period of years gives a fairly accurate idea of the total production of all livestock and livestock products.

Production of feed. The total weight of digestible feed in grain (including soybeans), hay, corn silage, and pasture amounted to 219.6 tons per farm in 1940, 261.4 tons in 1941, and 274.4 tons in 1942 (Table 1). This percentage increase in 1941 over 1940 was 19.0 percent, in 1942 over 1941 was 5.0 percent, and in 1942 over 1940 was 25.0 percent.

Although much of the increased production of feed was due to more favorable growing conditions in 1941 and 1942, some of it was due to more effective management. Some management factors that caused increased production were: (1) increased acreages of soil building legumes grown in 1939, 1940, and 1941 as compared with preceding years; (2) increased quantities of manure applied because of increased production of livestock; (3) increased use of high-yielding and adapted seeds; and (4) improved cultural practices made possible by the increased use of modern power machinery.

Much of the 5-percent increase in production in 1942 over 1941 was due to increased acreages of corn and soybeans and corresponding decreases in small grain, hay, and pasture. The corn acreage per farm was 77.5 in 1940, 80.1 in 1941, and 86.2 in 1942, and the acreage of soybeans was 17.9, 17.7, and 30.5 for the three years, respectively. When average

yields of crops on these farms during 1940, 1941, and 1942 are considered, the grain alone in one acre of corn produced 3,112 pounds of digestible nutrients per acre and all other grain (including soybeans), silage, and hay crops produced an average of only 1,471 pounds per acre. The crop yields and pounds of digestible nutrients produced per acre of the different crops were as follows: corn, 69.0 bushels, 3,112 pounds; oats, 53.4 bushels, 1,223 pounds; wheat, 24.1 bushels, 1,210 pounds; barley, 37.6 bushels, 1,421 pounds; soybeans, 23.1 bushels, 1,194 pounds; corn silage, 10.9 tons, 4,077 pounds; all hay, 2 tons, 2,036 pounds.

Production of livestock and livestock products. The total value of all livestock and livestock products valued at 1930 to 1941 average Illinois farm prices was \$4,781 per farm in 1940, \$5,471 in 1941, and \$5,842 in 1942. The percentage increase in 1942 over 1940 was 22.2 percent. The increased livestock production was made possible by the increased feed production. Increases in livestock production lagged behind increases in feed production, as would be expected.

There was 19.4 percent more pork produced in 1941 than in 1940, 16.2 percent more in 1942 than in 1941, and 38.8 percent more in 1942 than in 1940. The percentage increases in poultry and eggs were about equal to the percentage increase in hogs. Cattle increased in 1941 but decreased in 1942. There was a decrease in the small number of sheep kept or fed on these farms. Milk production was increased by 4.6 percent in 1942 over 1940.

The increase in pork accounted for about 82 percent of the total increase in all livestock and livestock products in 1942 over 1940. The swing to pork production on these farms was due both to the request for increased pork and to unusually favorable prices for hogs as compared with grain and with other livestock products.

The increased production of pork was obtained by breeding more sows, raising more pigs per litter, and feeding the hogs out to heavier weights. The average numbers of litters of pigs farrowed per farm were 21.0 in 1940, 25.0 in 1941, and 27.7 in 1942. The average number of pigs weaned per litter were 6.3, 6.5, and 6.6 during the three years. The average weights of market hogs were 250, 253, and 262 pounds per hog during the three years. The efficiency of pork production was increased during these years by the feeding of increasing amounts of protein feeds on Farm Bureau Farm Management Service farms from 8.6 percent (by weight) of all concentrates in 1940 to 9.1 percent in 1941 and 9.6 percent in 1942.

There was a slight increase in the number of cows milked on these farms from 6.4 per farm in 1940 to 6.7 in 1941 and 6.8 in 1942. How-

ever, there was a counteracting decrease in the milk produced per cow from 7,424 pounds in 1940 to 7,377 in 1941 and 7,266 in 1942.

There was a marked increase in the number of hens kept per farm from 107 in 1940 to 122 in 1941 and 137 in 1942. There was also an increase in the number of eggs produced per hen from 130 in 1940 to 131 in 1941 and 135 in 1942.

Corn and hogs, a good combination of wartime products. It required 407 pounds of grain (mostly corn) to produce 100 pounds of hogs on Farm Bureau Farm Management Service farms in 1942¹ and required 665 pounds of grain (including grain in silage) to produce 100 pounds of feeder cattle. Because of the greater dressing percentage of hogs, it is apparent that a given amount of grain will produce about twice as much pork as beef.

Since corn produces about twice as much feed per acre as the average of all other feed crops and since, when fed to hogs, corn produces about twice as much edible food as when fed to cattle, it follows that an acre of corn fed to hogs will produce about four times as much food for people as an acre of small grain, hay, and pasture fed to beef cattle.

However, cattle are required to convert the legumes and grasses needed for soil improvement and erosion control into meat and to utilize untillable land, and a limited amount of grain may wisely be fed in order to improve the quality of the beef.

More men were needed for the increased production. There was a slight increase in the number of men working on the 430 farms from year to year. This increase was evidently due to the increased amount of livestock kept. There were 3.1 percent more men working in 1941 than in 1940, 3.5 percent more in 1942 than in 1941. However, because of the greatly increased production of crops and livestock there were 17.0 percent more feed and 14.5 percent more livestock produced per man in 1942 than in 1940.

Relative Production and Increases in Production on the More, Medium, and Less Profitably Operated Farms

The 430 farms were divided into three groups of about equal numbers according to their profitableness in 1940.² The less profitable group of 145

¹Eighteenth Annual Report of the Farm Bureau Farm Management Service for 1942 (AE-2076).

²This study would have been more satisfactory if the farms had been grouped according to their relative earnings for three years rather than for one year. It is the author's opinion that the differences as shown in this analysis would have been in the same direction but not so great as those shown. In any one year some of the differences in earnings on different farms are caused by influences other than those under control of the operator or land owner.

TABLE 2.—CHANGES IN FEED, LIVESTOCK, AND GROSS EARNINGS PRODUCED DURING THE YEARS 1940, 1941, AND 1942 ON FARMS IN NORTH-CENTRAL ILLINOIS OPERATED WITH DIFFERENT DEGREES OF PROFITABLENESS IN 1940^a

Item	3-year average	1940	1941	1942	Change from 1940 to 1942
<i>Total digestible nutrients produced per 100 acres^b</i>					
Least profitable farms—tons.....	88.1	73.9	93.4	97.1	23.2
Medium profitable farms—tons.....	92.7	80.2	96.2	101.7	21.5
Most profitable farms—tons.....	98.4	89.5	100.3	105.6	16.1
Average of all farms—tons.....	93.1	81.2	96.6	101.4	20.2
<i>Total digestible nutrients produced per man</i>					
Least profitable farms—tons.....	121.1	103.9	128.5	130.2	26.3
Medium profitable farms—tons.....	125.0	110.9	130.8	132.7	21.8
Most profitable farms—tons.....	133.1	126.2	135.1	137.7	11.5
Average of all farms—tons per man.....	126.4	113.6	131.5	133.5	19.9
<i>Value of livestock and livestock products produced per 100 acres^c</i>					
Least profitable farms—value.....	\$1 697	\$1 496	\$1 739	\$1 855	\$ 359
Medium profitable farms—value.....	2 005	1 763	2 058	2 194	431
Most profitable farms—value.....	2 255	2 050	2 278	2 439	389
Average of all farms—value.....	1 981	1 768	2 022	2 160	392
<i>Value of livestock and livestock products produced per man</i>					
Least profitable farms—value.....	\$2 330	\$2 102	\$2 394	\$2 486	\$ 384
Medium profitable farms—value.....	2 703	2 438	2 797	2 863	425
Most profitable farms—value.....	3 050	2 891	3 068	3 179	288
Average of all farms—value.....	2 689	2 474	2 752	2 843	369
<i>Gross farm earnings per 100 acres</i>					
Least profitable farms—value.....	\$3 804	\$2 238	\$4 137	\$5 038	\$2 800
Medium profitable farms—value.....	4 390	2 683	4 678	5 809	3 126
Most profitable farms—value.....	4 918	3 385	4 970	6 399	3 014
Average of all farms—value.....	4 366	2 766	4 590	5 742	2 976
<i>Gross earnings per man</i>					
Least profitable farms—value.....	\$5 224	\$3 143	\$5 693	\$6 753	\$3 609
Medium profitable farms—value.....	5 917	3 709	6 356	7 581	3 872
Most profitable farms—value.....	6 650	4 775	6 694	8 341	3 566
Average of all farms—value.....	5 929	3 871	6 246	7 560	3 689

^aThe farms were divided into least, medium, and most profitable farms according to the rate earned on the capital investment in 1940. Approximately one-third of the 430 farms were in each group.

^bSee note (a) of Table 1.

^cCalculated at 1930 to 1941 Illinois farm prices.

farms earned an average of 3.7 percent on their total capital in 1940 and averaged 10.8 percent for the three years; the medium profitable group of 144 farms, 6.7 percent in 1940 and 14.0 percent for the three years; and the most profitable group of 141 farms, 10.1 percent in 1940 and 16.0 percent for the three years (Table 2).

Long continued farm business analyses have shown that most of such differences in profitableness of farms in any corn-belt area are due to differences in crop yields, returns for feed fed to livestock, labor costs, and power and machinery costs. These data show that there were very great differences in profitableness of management on the three groups of farms.

In this study, an attempt was made to learn whether there is more opportunity to increase total farm production for wartime needs by working with farmers in the upper one-third, middle one-third, or lower one-

third, according to the productive capacity of them and their farms. It should be said that all of the 430 farms are much more profitably operated than the average farms of the 23 corn-belt counties in which they are located. It is the author's opinion that the average of the least profitable group used in this analysis represents fairly well the average earnings of all farms in the area during the same three years.

Production per 100 acres of farmland. The increases from 1940 to 1942 of digestible feed produced per 100 acres of land in the farms were 23.2 tons, 21.5 tons, and 16.1 tons on the average of the least, medium, and most profitable farms, respectively. Since all farms were affected by the same influences affecting production, these data indicate that there is more opportunity to obtain increased feed production from the land by bringing major influences to bear on the less profitably operated farms than by devoting such major influences to farms that are already well operated.

The greatest increases in livestock production and in gross farm earnings per 100 acres of farmland were obtained on the medium profitable farms, and slightly higher increases were obtained on the most profitable than on the least profitable farms. However, the differences in the increases in livestock production on the three groups of farms were so small that they did not indicate any special advantage in working with one group more than another in order to get increased total production of livestock and livestock products.

Production per man. While the three-year average production of digestible feed per man was 10 percent greater on the most profitable than on the least profitable farms, the increase in production per man from 1940 to 1942 was 2.3 times as great on the least profitable than on the most profitable farms. Likewise, while the three-year average livestock production per man was 31 percent greater on the most profitable farms, the increase in production per man from 1940 to 1942 was 33 percent greater on the least profitable farms. The three-year average gross earnings per man were 27 percent higher on the most profitable than on the least profitable farms, while the increase in gross earnings per man from 1940 to 1942 were slightly higher on the least profitable farms.

Conclusions regarding opportunities for increased production on the least, medium, or most profitable farms. These data indicate that when the same influences were brought to bear towards increasing production of feed and livestock on the least, medium, and most profitably operated farms of North-Central Illinois, the increases per acre of land and per man employed were slightly greater on the farms that, at the beginning of the period, were the less profitably operated.

M. L. MOSHER

SOYBEAN ACREAGE FORGES AHEAD IN ILLINOIS IN COMPETITION WITH CORN AND OATS

The expansion in the acreage of soybeans threshed¹ in Illinois since 1930 has been phenomenal, amounting to 31 million acres or 757 percent. The increase was very large, percentagewise, in all areas of the state, but the largest percentage increases were in areas that had the smallest acreages in 1930. On the other hand, the greatest increases in acreage were in those areas that had relatively large acreages in 1930, i.e., in those areas best adapted to soybean production (Table 1).

TABLE 1.—INCREASE IN SOYBEAN ACREAGE IN ILLINOIS, 1930 TO 1942, BY CROP REPORTING DISTRICTS

	Increase in acres (thousands)	Percent of 1930 acreage		Increase in acres (thousands)	Percent of 1930 acreage
State.....	3 104	757	Central.....	546	1 090
Northwest.....	207	8 296	East.....	696	891
Northeast.....	282	6 873	East Southeast.....	482	491
West.....	332	1 081	Southwest.....	54	903
West Southwest.....	433	329	Southeast.....	71	832

Soybeans supplant corn and oats. As a farm enterprise, soybeans compete for time and soil types with corn. There is also direct competition for land with other harvested crops and rotation pasture. The crop that consistently shows the lowest returns, all factors considered, will be the one that is easiest to supplant if it uses the same types of land and competes for labor. During recent years, oats have given relatively low returns; they compete for land with both corn and soybeans; and compete to a lesser extent for labor. As might be expected under these circumstances, the increase in soybean acreage has been partially offset by decreases in both corn and oat acreage (Table 2).

¹All references to crop acreages in this article pertain to soybeans threshed and to corn and oats harvested for grain.

TABLE 2.—DECREASES IN CORN AND OATS ACREAGE IN ILLINOIS, 1930 TO 1942

	Corn decreases (thousand acres)	Oats decreases (thousand acres)		Corn decreases (thousand acres)	Oats decreases (thousand acres)
State.....	1 222	775	Central.....	185	178
Northwest.....	56	22	East.....	204	366
Northeast.....	21	58	East Southeast.....	191	109
West.....	140	52	Southwest.....	82	+31
West Southwest.....	240	8	Southeast.....	105	13

Approximately one-third of the 3 million acre increase in soybeans in the state came from other sources than corn and oats land. The variations from year to year in acreage of corn, oats, and soybeans for the state and for the nine crop reporting districts are shown in Figure 1. These data refer to harvested acreage. That accounts for the big drop in corn and oats in 1934, the year of the severe drouth.

Changes in returns from corn, oats, and soybeans. Because of favorable weather leading to high yields and the increase in demand leading to higher prices, acre values of all important Illinois crops have increased greatly from the depression values of 1930 to 1933, and the drouth of 1934. The acre value of corn advanced more than oats, but since 1935 the acre value of soybeans has averaged about \$5 to \$6 an acre below corn for the entire state, with considerable year-to-year variation. Favorable treatment of soybeans under the Agricultural Adjustment Administration crop control system and the attempt to restrict corn acreage probably had a great deal to do with the increase in soybean acreage in spite of the lower acre value of soybeans.

According to Wilcox (March 1942, *Illinois Farm Economics*) corn was much more profitable than any other important crop for the period 1936-1940 on Champaign and Piatt county farms where de-

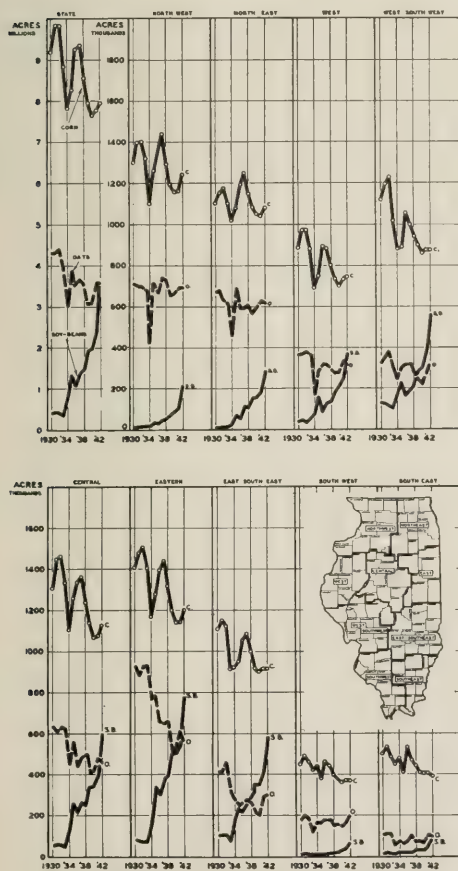


FIG. 1.—CHANGES IN ACREAGES OF CORN, OATS, AND SOYBEANS BY CROP REPORTING DISTRICTS IN ILLINOIS, 1930 TO 1942

Differences in alternative opportunities cause farmers to react differently to economic forces. In the middle part of the state, soybean acreage expanded greatly at the expense of both corn and oats. In the livestock and dairy areas as well as in the extreme southern part of the state, acreage of oats held up well.

tailed cost accounts were kept. The following data for 1936-1940 and 1941 were obtained from those records:

(1936-1940 AVERAGE)				
<i>Crop</i>	<i>Cost per acre</i>	<i>Yield per acre</i>	<i>Farm price</i>	<i>Profit</i>
Corn.....	\$17.63	54 bu.	\$.53	\$10.99
Soybeans.....	15.69	27 bu.	.76	4.83
Oats.....	12.52	44 bu.	.26	1.08 (loss)
(1941)				
Corn.....	19.67	72 bu.	.67	29.09
Soybeans.....	17.03	29 bu.	1.50	25.84
Oats.....	13.47	45 bu.	.31	.61

These cost account keepers were located in the East crop reporting district, and the unfavorable position of oats doubtless helps explain why oats acreage declined more in that crop reporting district between 1930 and 1942, both as measured in acres and percentage of 1930 acreage, than in any other crop reporting district. This district is in the cash grain area.

A contrasting situation existed in the Southeast and Southwest crop reporting districts. In both these districts, corn acreage declined much more than oats. In fact, oats acreage was well maintained in the Southwest district. The acreage of oats in that area was small and probably needed in the crop rotation as a nurse crop for clover. Soybean acreage did not increase materially in either district until 1940. Developments in the Northwest district were somewhat comparable to developments in the Southwest and Southeast districts. Oats acreage was well maintained but corn acreage declined and soybean acreage expanded.

It is apparent that the state average does not tell the whole story and that agricultural programs should take into consideration the variations in conditions that affect cropping systems in the various parts of Illinois. These conditions include soil types, levels of fertility; climatic conditions, topography, as it affects size and shape of fields, use of power driven machinery, erosion, and so forth; need for a nurse crop for clover; the importance of livestock enterprises as they affect the needs for feed grains, hay and pasture; and the availability and demand for labor.

The role of prices. We have not had freely competitive prices for farm products for many years. The Federal Government has supported prices of some farm products directly or indirectly since the days of the Federal Farm Board. Presumably, if freely competitive prices existed, each farmer would make adjustments from year to year according to his estimate of relative profitableness. Under such circumstances the level of prices in relation to costs would be the most powerful directing influence. To the extent that individual farmers are not penalized for excess acreage

or subsidized in order to encourage an increase in acreage, relative prices still guide the individual farmer. Norton and Wilcox (November 1941, *Illinois Farm Economics*) point out that, considering yields and costs of production and in the absence of any restrictions on acreages, it would require a price for soybeans approximately 2.2 times the price of corn to make them freely competitive in areas most favorable for soybean production. They point out, however, that "AAA payments to hold down acreages of corn have been a primary factor in increasing acreages of soybeans. This is evident from the fact that a bushel of soybeans from 1937-1940 was worth nearer 1.5 times than 2.2 times the price of a bushel of corn." In 1941 the price of soybeans would have had to be about \$1.65 a bushel, or nearly 2.5 times the price of corn, to return the same net profit as corn on these cost accounting farms. Although we have not had freely competitive prices, that does not mean that price relationships cannot be used to guide production under a controlled economy.

National programs. Maximum production of food is the agricultural goal for the duration of the war. Because of the particular requirements of the armed forces and countries receiving agricultural products under lend-lease arrangements and because of the necessity to prevent the full impact of the current excessive buying power upon prices, it is necessary to maintain control of prices and to guide production into desired channels. Relative prices might well be used to guide production, but we are not in a position to go back to a freely competitive price system for all products.

It would seem reasonable to set up a schedule of our *needs* for all three purposes, i.e., our armed forces, lend-lease and civilian consumption; then to set up several schedules, involving different levels of total production, divided according to the degree of urgency of need. A somewhat flexible system might then be set up to take care of most urgent needs first and lesser needs as the volume of production justified. As we have no control over weather conditions as they affect crop yields, the flexible portion of the program would have to be confined largely to the production of meats and dairy and poultry products by using the quantity of feed that became available.

The amount of inducement offered farmers to grow soybeans would be determined by the relative needs for soybean oil and soybean meal compared to the needs for pork, lard, butter, choice and prime beef, milk, eggs, and so forth to be produced from corn or other farm crops. If the high value of soybean meal were fully understood by livestock feeders or if we have to shift more to vegetable proteins, soybean prices might well be permitted to rise in relation to corn and oats prices.

G. L. JORDAN

H. P. Rusk

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Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Weekly wages, all manufacturing industries, unadjusted ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period..	1926	1926	1935-39	1935-39	1935-39	1935-39	1935-39	1935-39	1939	1935-39
1929.....	95	105	130	129	136	108	84	121	120	110
1930.....	86	88	112	124	114	92	74	110	98	91
1931.....	73	65	77	109	84	61	56	93	74	75
1932.....	65	48	52	95	60	45	48	72	51	58
1933.....	66	51	56	91	62	54	59	68	54	69
1934.....	75	65	76	99	73	58	58	79	70	75
1935.....	80	79	103	101	90	68	68	86	80	87
1936.....	81	81	107	99	104	86	87	98	93	103
1937.....	86	86	120	104	108	92	88	107	111	113
1938.....	79	69	87	98	99	85	87	101	85	89
1939.....	77	65	81	97	99	85	87	108	100	108
1940.....	78	68	86	98	107	94	96	118	114	123
1941.....	87	82	109	104	142	122	117	144	168	156
1942.....	99	105	140	118	197	166	141	187	242	181
1942 May...	99	104	140	118	188	151	128	180	229	174
June.....	99	104	138	118	192	156	132	187	234	176
July.....	99	105	139	118	192	131	111	188	243	178
Aug.....	99	106	143	119	204	134	113	193	255	183
Sept.....	100	108	143	119	208	144	121	198	262	187
Oct.....	100	109	145	120	211	271	226	205	271	191
Nov.....	100	110	144	121	224	200	165	209	280	194
Dec.....	101	114	148	122	226	191	157	215	288	197
1943 Jan....	102	117	156	124	224	176	142	215	291	199
Feb.....	102	119	160	124	240	185	149	219	297	202
Mar.....	103 ¹¹	123	164	125	260	212	170	224	304	203
Apr.....	104 ¹¹	124	165	126	261	187	148	227	309	203 ¹¹
May.....	104 ¹¹	126	165	126	257 ¹¹	...	...	...	...	203 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			June 1942	Current months		
	1924-29	1941	1942		April	May	June
Corn, bu.....	\$.81	\$.63	\$.77	\$.79	\$.98	\$.99	\$1.00
Oats, bu.....	.42	.36	.48	.45	.62	.61	.66
Wheat, bu.....	1.30	.93	1.13	1.06	1.36	1.36	1.38
Barley, bu.....	.66	.55	.74	.74	.88	.88	.91
Soybeans, bu.....	1.94	1.24	1.65	1.58	1.64	1.65	1.66
Hogs, cwt.....	9.97	9.37	13.37	13.60	14.50	14.00	13.80
Beef cattle, cwt.....	8.57	10.07	11.93	11.60	13.80	14.00	14.10
Lambs, cwt.....	12.22	9.85	12.28	13.10	14.20	14.20	14.20
Milk cows, head.....	78.00	80.00	102.00	98.00	132.00	135.00	136.00
Veal calves, cwt.....	11.27	11.19	13.63	13.30	14.20	14.60	14.50
Sheep, cwt.....	6.52	4.43	5.50	6.00	7.50	7.30	7.10
Butterfat, lb.....	.42	.33	.39	.36	.50	.49	.48
Milk, cwt.....	2.32	2.05	2.40	2.15	2.85	2.85	2.85 ¹¹
Eggs, doz.....	.30	.22	.29	.26	.33	.33	.34
Chickens, lb.....	.21	.15	.19	.19	.24	.24	.25
Wool, lb.....	.36	.37	.40	.40	.41	.43	.45
Apples, bu.....	1.59	1.07	1.53	1.75	2.60	2.75	2.75
Hay, ton.....	13.88	8.49	11.33	10.60	14.50	14.70	14.10
Potatoes, bu.....	1.39	.82	1.32	1.75	2.20	2.55	2.60

¹¹⁻¹²For sources of data in tables see previous issue.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.

ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

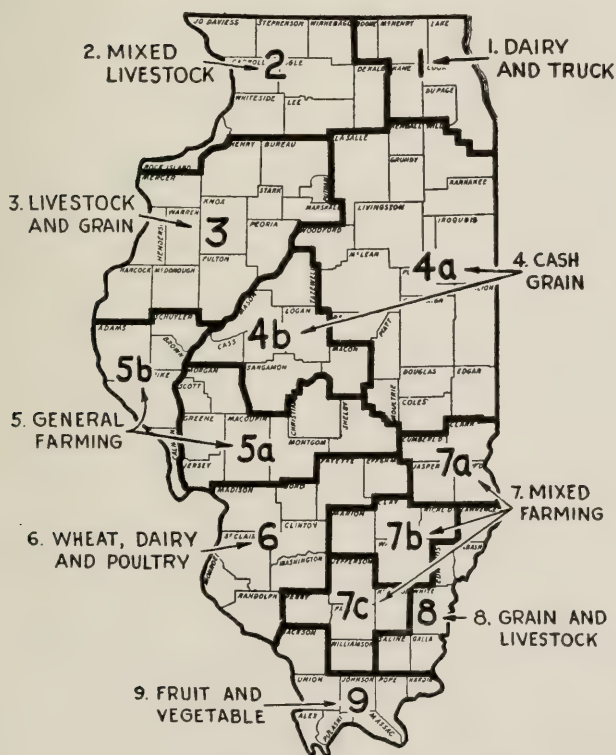
College of Agriculture • University of Illinois • Department of Agricultural Economics

G. L. Jordan, Editor

August, 1943

Number 99

Summary of Annual Farm Business Reports of 3,192 Illinois Farms For the Year 1942



THE NINE MAJOR TYPE-OF-FARMING
AREAS IN ILLINOIS

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

FOREWORD

This issue of *Illinois Farm Economics* is devoted to an analysis of 3,192 farm records which were kept throughout Illinois during 1942. It also includes some comparisons of earnings for 1942 with those of previous years.

Illinois farmers have cooperated with the University of Illinois in keeping financial and production records of their farms for more than 25 years. These records have become more useful as more and more farmers have kept them and as they have been continued over a longer period of years. The greater value from these records is that of helping farmers who keep them to study their own business. As the records are kept over a period of years, they provide a basis for making changes which will improve the farm earnings and enable each individual to compare his farming operations with those of others who are farming under similar conditions.

The Illinois Farm Account Book, if properly used, contains all of the information needed to file an income tax report on the farm business on either the cash or the accrual basis. The record when summarized provides totals which may be transferred to the tax form with a minimum of time and effort.

Another value of the records is that of studying farm earnings from year to year on the same or similar farms as a means of showing the year-to-year changes in the financial condition of farmers. A comparison of the prices of things farmers buy and sell helps to accomplish this purpose, but farming is so complex, with the sources of income and the character of expenses varying widely on farms of different types, that farm records provide the most satisfactory basis for such comparisons.

A fourth value to be gained from the records is that of showing how the investments, incomes, expenses, earnings, yields, and sources of income vary in different parts of the state due to such factors as soil differences, size of farms, type of farming, climatic conditions, and available markets. The records also show the influence of variations within type-of-farming areas in quality of soil, size of farm, and type of organization on crop yields, capital investments, and earnings.

H. C. M. CASE

SUMMARY OF FARM BUSINESS REPORTS OF 3,192 FARMS IN ILLINOIS FOR 1942

J. B. CUNNINGHAM, P. E. JOHNSTON, AND M. L. MOSHER

Farm account cooperators in Illinois responded to the war demand for increased production in 1942 over 1941 by increasing grain acreage 5 percent and livestock production 6.2 percent. In expanding their production the cooperators milked 5 percent more cows, weaned 6.8 percent more pigs, kept 13.8 percent more hens, increased machinery investments 12.3 percent, and used .9 percent more labor.

Farming-type area	Acres of grain crops		Tons of grain produced		Livestock production	
	1941	1942	1941	1942	1941	1942 ^a
Area 1.....	82	90	113	124	\$6 462	\$7 247
Area 2.....	98	104	137	153	6 627	6 853
Area 3.....	124	137	165	187	6 898	7 811
Area 4.....	168	173	206	200	4 227	4 476
Area 5.....	120	123	136	120	5 256	5 372
Area 6.....	91	93	69	61	3 361	3 349
Area 7.....	82	90	64	60	2 746	2 799
Area 8.....	96	106	92	90	2 655	2 822
Area 9.....	66	75	48	48	2 260	2 412
Weighted average.....	117	123	133.6	133.5	\$4 608	\$4 894

^aReceipts and net increases for livestock and livestock products in 1942 were adjusted to the 1941 price level by dividing the 1942 receipts and net increases by the ratio of 1942 to 1941 Illinois farm prices for each class of livestock and livestock product.

Despite an increase in the acreage of grain in each area of the state, average grain production for all accounting farms failed to increase because less favorable weather in 1942 than in 1941 caused lower yields of wheat, oats, and soybeans (especially in the south half of the state). Furthermore, in 1941 the accounting farms had already reached a high level of production and hence were nearer a "ceiling" of production, than if they had started at a lower level. For the entire state, however, the crop report shows a higher total grain production for 1942 than for 1941. In 1941, corn yields per acre averaged 62 bushels on the accounting farms and 53 bushels on all farms. The cash income per farm averaged \$8,002 on the accounting farms and \$5,703 on all Illinois farms when adjusted to the same size as the accounting farms. In 1942 the cash income per farm increased to \$10,865 on the accounting farms (an increase of \$2,863) and to \$7,613 (an increase of \$1,910) on all Illinois farms when adjusted to the same size as the accounting farms.

Volume of production on efficient, large-scale farms. The response of the operators of efficient, large-scale farms to the call for maximum production in 1942 is indicated by an analysis of 430 northern Illinois

Farm Bureau Farm Management Service records on the same farms. The average production figures in 1941 and 1942 and the percentage increase were as follows:

<i>Product</i>	<i>1941 volume</i>	<i>1942 volume</i>	<i>Percent increase</i>
Hogs (tons).....	19.1	22.2	16.2
Cattle (tons).....	10.0	9.6	-4.0
Milk (tons).....	24.7	24.8	.4
Eggs (dozens).....	1 335	1 544	15.8
All livestock (value) ^a	\$5 471	\$5 842	6.8
Grain (tons).....	223.1	242.2	8.6

The production per worker on these farms in 1942 was 117.5 tons of grain and 12.2 tons of hogs and cattle.

These farms are located in Areas 2, 3, and 4, where crop yield indexes were higher in 1942 than for the remainder of the state (Fig. 3). Consequently, the increases in grain production were greater than for all accounting farms in the state, but approximately the same as for all accounting farms in the same areas.

Obviously, every farmer, including the operators of small farms, should do his best to increase production during the war period, but those who plan the programs designed to influence production should recognize that a large percentage of the production must come from the large size family farms which are well equipped with machinery and which have efficient operators. Furthermore, it is just as important to maintain high production on farms which have reached a high level of production as it is to increase production on farms with a low level of production.

Net cash income an acre. The average net cash income an acre for accounting farms was higher in 1942 than for any year for which comparable records are available. The average net cash income an acre of \$14.99 for 1942 compared with \$9.91 for 1941, \$7.40 for 1936, \$7.78 for 1929, and an average of \$5.30 for the years 1934, 1935, 1937, 1938, and 1939, when earnings were practically the same for each year (Fig. 1).

The average cash income an acre for Illinois accounting farms was as follows for the successive years 1928-1942:

1928.....\$6.22	1933.....\$3.00	1938.....\$5.25
1929.....7.78	1934.....5.40	1939.....5.40
1930.....6.22	1935.....5.14	1940.....6.82
1931.....2.69	1936.....7.40	1941.....9.91
1932.....1.47	1937.....5.33	1942.....14.99

The net cash income an acre was computed by subtracting the value of unpaid labor from the cash balance for the year and by dividing that difference by the number of acres on the farms. In order to calculate the

^aAll livestock and livestock products were valued at 1930 to 1941 prices to make the figures comparable.

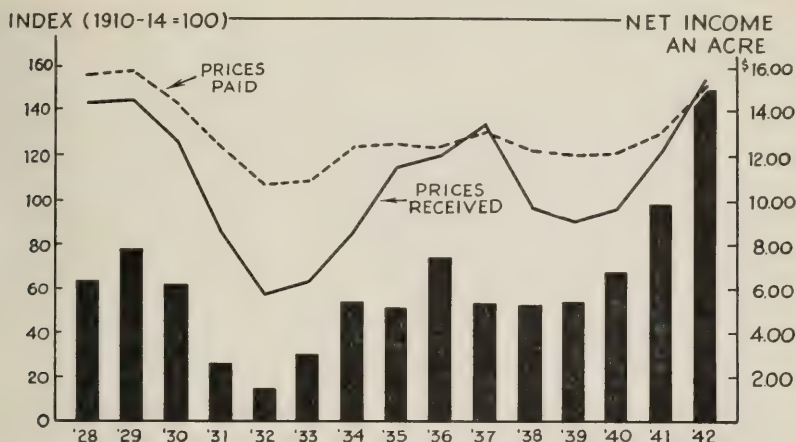


FIG. 1.—AVERAGE NET CASH INCOME AN ACRE (UNPAID LABOR DEDUCTED) ON ILLINOIS ACCOUNTING FARMS, PRICES PAID BY FARMERS IN THE UNITED STATES, AND PRICES RECEIVED BY ILLINOIS FARMERS, 1928-1942

state averages, farming-type area averages were weighted by the acres of land in the farms (census) in each farming-type area.

These returns do not include the inventory changes or the money value of food, fuel, and other items of living, all of which are secured from the farm. The net cash income an acre is one of the best measures for comparing incomes of groups of farms over a period of years, or for contrasting the level of income for different type-of-farming areas, because it is not influenced by changes in the inventory of land. During any period of years, earnings fluctuate more widely from year to year when inventory changes are included, since there are usually inventory losses when prices are declining and inventory increases when prices are rising.

Earnings for World War I and II compared. Were net farm earnings for accounting farms as high in 1942 as in 1917, comparable years

Item	1917	1942
Number of farms.....	19	74
Size of farm, acres.....	214	237
Value of land an acre.....	\$199	\$131
Gross receipts an acre ^a	40.95	46.84
Gross expenses an acre.....	9.31	16.88
Net income an acre.....	31.64	29.96
Rate earned on investment, percent.....	12.8	14.3
Corn yield an acre, bushels.....	51	72

^aThe value of farm products used in the household was excluded from receipts for both years.

in World War I and II? This question can be answered for several individual counties, but not for the state as a whole, because in 1917 farm accounts did not have state-wide coverage.

For accounting farms in Woodford County, for example, net income an acre on an inventory basis was slightly larger in 1917 than in 1942 because in 1917 gross expenses were relatively less in relation to gross receipts than in 1942. The investment per acre in land, however, was much lower in 1942 than in 1917 and as a result the rate earned on investment was 14.3 percent in 1942 as contrasted to 12.8 in 1917. Corn yield per acre, an important factor affecting earnings in Woodford County, averaged 51 bushels an acre in 1917 and 72 bushels in 1942.

Effect of large production and high prices on earnings. Farm incomes were much higher in 1942 than in 1937, years in which price ratios were about the same. In 1937, the ratio of prices received by Illinois farmers to prices paid for supplies was 102 percent of the 1910-1914 ratio, and in 1942, it was 103 percent (Fig. 1).

Why, then, should the net cash income an acre be so much larger in 1942 than in 1937? The answer is simply that, due to the war, the level of both domestic and foreign demand was high in 1942, and farmers had a large supply of salable products because of an accumulation of grain and livestock resulting from six consecutive years of better than average crop yields and from favorable feeding ratios. Such a combination of circumstances is unusual. Therefore, the farmer should be cautious about making long-time commitments based on 1942 net earnings.

We have had years of low volume of sales, as 1937, when prices were high but there was little to sell, and we have had years like 1939 when a large volume of products was sold at relatively low prices. The effect of both of these combinations was a fairly low level of farm incomes. In 1936, a fair volume of products was marketed at good prices, but 1942 was a year when a large volume of products was sold for high prices.

In 1942, with a strong domestic demand resulting from the high incomes of city workers, and with a stronger foreign demand, the large volume of agricultural products was sold at increasing prices. As a result, the average cash income per farm on accounting farms advanced from \$8,002 a farm in 1941 to \$10,865 a farm in 1942. When inventory changes were included, the gross income per farm increased from \$10,084 a farm in 1941 to \$12,427 a farm in 1942, a 24-percent increase. These data indicate that farm incomes increase very rapidly when a rise in price accompanies an increase in production.

Accounting farms represent better than average condition. *The data contained in this report represent Illinois farm conditions which are*

better than average because the accounting farms are larger than average, the crop yields are above average, and the farms on the whole are operated with an efficiency which is greater than average. Records of this type are useful for showing variations in income from year to year and for demonstrating differences between farming-type areas. The variation in income from farm to farm within the groups is shown in Table 3.

The extent to which the volume of production from accounting farms exceeds that from the average of all farms in each farming-type area is indicated by the following data which give the value of farm products sold, traded, or used by farmers in 1939:

Farming-type areas	Value of products per farm	
	All farms	Accounting farms
1.....	\$2 814	\$4 769
2.....	2 666	6 295
3.....	2 741	7 033
4.....	3 156	6 665
5.....	2 088	5 603
6.....	1 391	3 413
7.....	712	2 821
8.....	1 026	3 131
9.....	787	2 632
Weighted average.....	\$2 174	\$5 220

Value of farm products used in the household. In the farm business reports published since 1938, and in the printed tables at the back of this report, the farm value of meat, milk, eggs, and other farm products used in the household was included as a source of income. In comparing the 1938-1942 records with those for other years, the value of farm products used in the household has been omitted because the data are not available for years prior to 1938. The average values per farm and per acre of farm products used in the household for the various farming-type areas are as follows:

VALUE OF FARM PRODUCTS USED IN HOUSEHOLD, 1940, 1941, AND 1942

Area	Per farm			Per acre		
	1940	1941	1942	1940	1941	1942
Area 1.....	\$253	\$279	\$332	\$1.41	\$1.54	\$1.72
Area 2.....	247	276	330	1.17	1.33	1.60
Area 3.....	252	293	366	1.01	1.22	1.47
Area 4.....	236	284	344	.87	1.07	1.34
Area 5.....	244	283	342	.96	1.13	1.36
Area 6.....	250	282	349	1.25	1.32	1.61
Area 7.....	244	292	334	.99	1.18	1.33
Area 8.....	211	267	317	.93	1.21	1.46
Area 9.....	220	278	345	.94	1.20	1.61
State average*.....	\$242	\$284	\$342	\$1.02	\$1.20	\$1.53

*Weighted by the number of census farms in each area.

TABLE 1.—SELECTED ITEMS OF INCOME AND EXPENSE ON ACCOUNTING FARMS IN ILLINOIS, 1935-1942^a

Item	1935	1936	1937	1938	1939	1940	1941	1942
Acres per farm.....	216	227	227	232	237	242	239	239
Cash income per farm.....	\$4 342	\$5 374	\$5 309	\$5 285	\$5 920	\$6 334	\$8 002	\$10 865
Cash expenditures per farm.....	2 605	3 034	3 424	3 421	4 001	4 094	4 983	6 470
Cash balance.....	\$1 737	\$2 340	\$1 885	\$1 864	\$1 919	\$2 240	\$3 019	\$ 4 395
Inventory increase.....	779	802	727	428	1 117	541	2 082	1 562
Cash balance plus inventory increase	\$2 516	\$3 142	\$2 612	\$2 292	\$3 036	\$2 781	\$5 101	\$ 5 957
Unpaid labor.....	668	740	733	698	696	691	769	1 011
Net farm income.....	\$1 848	\$2 402	\$1 879	\$1 594	\$2 340	\$2 090	\$4 332	\$ 4 946
Gross receipts per acre ^b	\$17.14	\$19.55	\$18.00	\$16.66	\$19.89	\$19.16	\$30.07	\$35.44
Total expense per acre ^c	8.68	9.06	9.86	9.95	10.26	10.47	11.63	14.82
Net receipts per acre ^b	\$ 8.46	\$10.49	\$ 8.14	\$ 6.71	\$ 9.63	\$ 8.69	\$18.44	\$20.62
Net receipts per acre (cash basis)...	\$ 5.14	\$ 7.40	\$ 5.33	\$ 5.25	\$ 5.40	\$ 6.82	\$ 9.91	\$14.99

^aIn this table and in succeeding tables where data are on a farm basis rather than on an acre basis, state averages were obtained by weighting area averages by the number of farms in each area.

^bGross receipts include inventory changes.

^cTotal expense includes unpaid labor.

From the records which are used to analyze the farm business, rental value of the farm residence as well as depreciation and maintenance expenses of the residence are omitted. Thus the accounting for farm buildings agrees with income tax rulings.

Cash income per farm. The average cash income and cash expenditures per farm were larger in 1942 than in any year for which comparable records are available (1926).¹

The average cash balance of \$4,395 for 1942 was over four times as large as the average cash balance of \$968 for 1932, the low-income year

¹Comparable records are available to 1926 and a limited number, to 1916.

TABLE 2.—CASH FARM BUSINESS EXPENDITURES ON ILLINOIS ACCOUNTING FARMS 1936-1942

Nature of expenditures ^a	Average per farm							Percent 1942 is of 1941
	1936	1937	1938	1939	1940	1941	1942	
Land improvements and farm buildings.....	\$ 212	\$ 274	\$ 314	\$ 368	\$ 368	\$ 389	\$ 532	137
Machinery and equipment...	841	956	969	961	1 019	1 335	1 430	107
Feed and grain.....	612	656	471	634	647	947	1 461	154
Crop and sealing expense...	205	276	148	144	152	159	220	138
Hired labor.....	261	306	348	371	369	432	548	127
Taxes.....	231	234	256	272	287	294	302	103
Livestock and miscellaneous	672	722	915	1 251	1 252	1 427	1 977	139
Total cash expenses.....	\$3 034	\$3 424	\$3 421	\$4 001	\$4 094	\$4 983	\$6 470	130

^aTotal for each item of expenditure was determined by weighting the averages of each area by the number of census farms in the area.

of the depression (Table 1). The average cash balance for 1942 was \$1,376 a farm larger than in 1941, but income tax payments made in 1942 for 1941 must be deducted from this sum in order to calculate the increase available for farm family living and savings.

Cash farm business expenditures. Illinois accounting farmers spent more money to run their farms in 1942 than in any year of record (since 1926) and probably established an all-time high because farms are larger now and farmers purchase a higher percentage of the materials used to operate their farms. Expenditures averaged 30 percent larger in 1942 than in 1941 and 113 percent larger in 1942 than in 1936 (Table 2). More money was spent in 1942 than in 1941 for all items, with the largest increases for feed and livestock, and the smallest increases for taxes, machinery, and equipment. The expenditures included both capital and operating items. For instance, outlays for new machinery and repairs as well as gas and oil expenses are included under machinery and equipment.

The average expenditure per farm of \$6,470 in 1942 may be contrasted with an average expenditure of \$1,494 per farm in 1933, the low point for expenditures in the depression period — an increase of 433 percent. This increase reflects changes in the price level, changes in the quantities purchased, and changes in the average size of farm.

Inventory increases. Inventory increases have occurred each year since the depression year of 1932, and these annual increases have ranged from \$428 per farm in 1938 to \$2,082 per farm in 1941. The average annual increase for the 10-year period ending in 1942 was \$902 a farm; for the 10-year period it has totaled \$9,020 a farm.

An inventory increase indicates that the combined value of livestock, grain, improvements, and machinery was larger at the end of the year than at the beginning. The ending inventory of each year is for the same farms as the beginning inventory, but the farms included in the averages for one year are not exactly the same as those for any other year because some old cooperators are dropped each year and new ones are added.¹

The series of inventory increases for a period of 10 years reflects the increase in prices for farm products, heavy investments in improvements and machinery, and an accumulation of grain and livestock following the drouth of 1934. Enough money has been spent for machinery and improvements so that the value per farm on January 1, 1942, was 99 percent larger for machinery and 25 percent larger for improvements than it was in 1934. Earnings were larger during the last 10 years if inventory changes are included than if calculations are made on a cash basis. On the other hand, inventory losses averaged \$866 a year for the 3 years,

¹A high percentage of the cooperators for one year continues for the next.

TABLE 3.—VARIATIONS IN EARNINGS FROM FARM TO FARM BY FARMING-TYPE AREAS, 1942*

Farming-type area	Level of earnings	Number of farms	Average rate earned on investment	Net earnings per farm	Labor and management earnings
	(rate earned on investment)		(percent)		(per farm)
1	Less than 13.00.....	73	8.8	\$3 441	\$2 142
	13.00 to 16.99.....	40	15.0	5 535	4 442
	17.00 or more.....	42	19.8	7 382	6 280
2	Less than 15.00.....	165	11.1	\$4 295	\$3 137
	15.00 to 19.99.....	141	17.4	6 397	5 354
	20.00 or more.....	178	24.7	7 707	6 960
3	Less than 17.00.....	231	12.7	\$5 307	\$3 989
	17.00 to 21.99.....	170	19.4	8 580	7 142
	22.00 or more.....	179	26.3	10 357	9 156
4	Less than 14.00.....	305	10.6	\$4 400	\$3 079
	14.00 to 17.99.....	176	15.8	7 800	6 117
	18.00 or more.....	182	21.3	9 044	7 705
5	Less than 14.00.....	154	9.5	\$2 810	\$2 089
	14.00 to 18.99.....	91	16.6	5 258	4 467
	19.00 or more.....	107	24.8	7 555	6 847
6	Less than 10.00.....	142	5.1	\$ 999	\$ 731
	10.00 to 14.99.....	83	12.5	2 460	2 190
	15.00 or more.....	95	20.2	3 799	3 588
7	Less than 10.00.....	62	4.4	\$ 646	\$ 462
	10.00 to 14.99.....	17	12.1	2 069	1 820
	15.00 or more.....	68	21.4	3 373	3 208
8	Less than 12.00.....	24	7.8	\$1 195	\$ 936
	12.00 to 19.99.....	37	16.8	2 642	2 463
	20.00 or more.....	31	25.0	4 995	4 617
9	Less than 10.00.....	8	5.1	\$ 660	\$ 545
	10.00 to 19.99.....	12	14.7	1 822	1 749
	20.00 or more.....	8	28.7	3 245	3 319

*For a more detailed analysis of variations in earnings, see the 1942 reports for each area.

1930-1932. The cash basis more nearly reflects the ability of the farmer to pay his interest, to buy the things that the family needs, and to add something to the savings than does the method of accounting which includes inventory changes. Inventory changes must be included, however, in order to find the net position of the farm business for the year.

Variations in earnings from farm to farm. Earnings for the farms included in each area vary widely. Much of the farm-to-farm variation is due to the managerial ability of the operators and to the manner in which the farms are organized and operated. The records were grouped for this study into high-, medium-, and low-income farms on the basis of the rate earned on investment. The value of farm products used in the household was included as a farm receipt in this tabulation.¹ The wide variation in rate earned on investment, net earnings per farm, and labor

¹The records for Grundy, LaSalle, Livingston, McLean, Tazewell, and Woodford counties were not available when the averages for Area 4 were calculated.

and management earnings indicates the opportunities which some farmers have for improving the income from their farms because these variations are largely due to factors over which the operator has some control (Table 3).

Prices of important farm products. During 1942, hog prices advanced 25 percent; beef cattle prices, 16 percent; butterfat prices, 38 percent; and corn prices, 21 percent.

The index of all Illinois farm prices averaged 28 percent higher in 1942 than in 1941. The increase for the various groups was as follows: meat animals, 32 percent; dairy products, 18 percent; chickens and eggs, 27 percent; grain, 24 percent; and fruit, 42 percent.

A great deal of the variation in earnings between the different types of farming in Illinois is due to the constantly shifting ratios between the prices of livestock, livestock products, and feeds. During 1942, the index of hog prices was materially higher than that of butterfat. Likewise, the ratio of hog prices to corn prices was much more favorable to the hog feeder than to the dairyman. Therefore, earnings as well as production increased on hog farms in relation to dairy farms.

Farm product	December 15 farm prices		Average yearly farm prices	
	1941	1942	1941	1942
Corn, bu.....	\$.66	\$.80	\$.63	\$.77
Wheat, bu.....	1.14	1.24	.93	1.13
Oats, bu.....	.47	.49	.36	.48
Barley, bu.....	.70	.80	.55	.74
Soybeans, bu.....	1.48	1.59	1.24	1.65
Hay, ton.....	11.40	11.90	8.49	11.32
Horses, head.....	69.00	85.00	68.00	84.00
Hogs, cwt.....	10.70	13.40	9.37	13.37
Beef cattle, cwt.....	10.80	12.50	10.07	11.93
Lambs, cwt.....	10.60	13.70	9.85	12.27
Milk cows, head.....	91.00	120.00	80.00	102.42
Milk, cwt.....	2.50	2.80	2.05	2.42
Butterfat, lb.....	.34	.47	.33	.39
Chickens, lb.....	.15	.20	.15	.19
Eggs, doz.....	.32	.34	.22	.29

In 1942, 17.3 bushels of corn equaled in value 100 pounds of live hog compared with an average of 14.8 bushels in 1941, and an average of 12.8 bushels for 1931-1940. Under favorable feeding ratios, hog production reached record levels in 1941 and continued to expand in 1942. This upward swing may be expected to terminate in 1943.

Variations in supplies. Prices of farm products at inventory time influence farm earnings because all feed, grain, livestock, and other farm property must be valued at the beginning and at the end of the year. The influence is greatest where large stocks are on hand at inventory

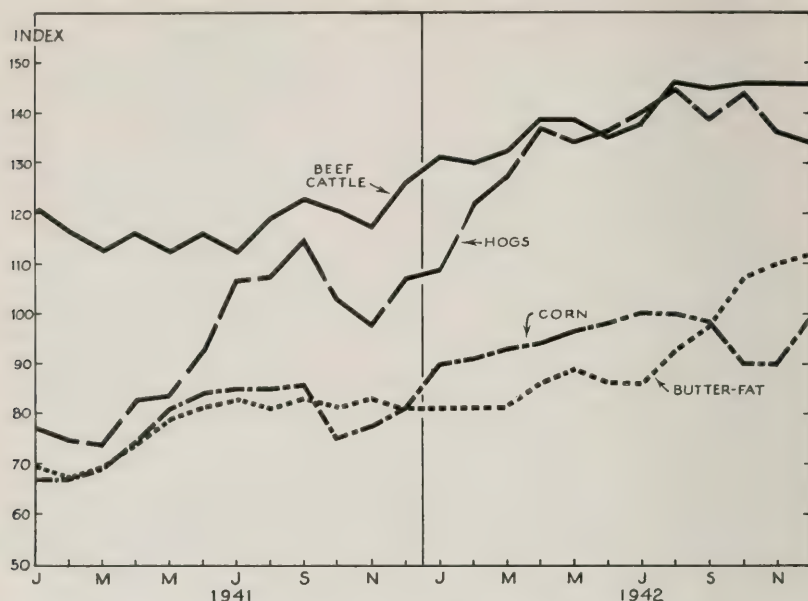


FIG. 2.—INDEXES OF THE AVERAGE MONTHLY ILLINOIS FARM PRICES OF BUTTERFAT, CORN, HOGS, AND BEEF CATTLE, 1941 AND 1942. (1924-1929 = 100)

time. Abundant feed supplies and increasing inventories have characterized the years since the drouth year of 1936. In 1942, the high crop yield resulted in large inventories of feed on most farms. There was an average inventory per farm of 2,937 bushels of corn and 710 bushels of oats on accounting farms on January 1, 1943. This was 119 bushels more corn per farm and 28 bushels less oats per farm than a year earlier. For the state as a whole, the corn reserves on January 1, 1943, were larger than they had been a year earlier. According to the Division of Agricultural Statistics at Springfield, the supplies of the four major grain crops on Illinois farms on January 1, 1942 and 1943 were as follows:

Type of grain	1942 (million bushels)	1943
Corn	333	338
Oats	99	90
Wheat	9	3
Soybeans	17	29

Livestock numbers continued to increase on accounting farms in 1942. The following data indicate the percentage increase in livestock numbers on accounting farms during the calendar years 1941 and 1942:

Type of livestock	Percent of increase		Type of livestock	Percent of increase	
	1941	1942		1941	1942
Milk cows.....	4	1	Brood sows.....	24	13
Beef cows.....	14	3	Spring pigs.....	4	17
Feeder cattle.....	0	4	Summer pigs.....	13	24
Feeder lambs.....	25	-29	Fall pigs.....	23	8

In 1942, 15.3 litters were farrowed per farm on accounting farms, compared with 13.7 litters in 1941, 12.7 litters in 1940, and 12.0 litters in 1939. Most of the increase in 1942 over 1941 was in spring and summer litters.

The increase in beef cows and hogs was general throughout the United States. All cattle numbers and hog numbers were at record levels on January 1, 1943, and marketings of hogs will reach an all-time high this year. Livestock production trends and grain reserves on farms on January 1, 1942 and 1943 indicate that there will be a material reduction in feed supplies in 1943 unless another bumper grain crop is forthcoming.

Crop yields in Illinois, 1942. The year 1942 was the sixth consecutive year of high crop yields in Illinois. The weighted average yield of corn, oats, wheat, and soybeans for 1942 was 128 percent of the 10-year average, 1931-1940 (Fig. 3).

In 1942, yields of the four principal grain crops, as expressed in percentages of the 1931-1940 averages, follow: corn, 143; oats, 127; soybeans, 109; and wheat, 70. Corn yields were higher than the average for the ten years in each of the counties of the state except Cumberland; oat yields were higher in 88 counties including all of the principal oat producing counties of northern Illinois; and soybean yields were higher in all counties except McHenry, Boone, Winnebago, JoDaviess, Shelby, Richland, and Cumberland. Wheat yields, on the other hand, were lower than the 10-year average in 74 counties including all of the principal wheat producing counties of southern and western Illinois.

The variation in crop yields between counties and groups of counties as well as between townships, communities, and even individual farms was greater than usual in 1942 because of rainfall and other climatic differences.

Crop yields, in relation to the 10-year average, were highest in the northeast counties where weather conditions were particularly favorable for all grain crops except soybeans which are grown on a more restricted basis than in the central Illinois counties. The counties with the lowest yields, for the most part, were in an area across the south central part of the state.

Variations in net cash income an acre. The average net cash income per acre for Illinois accounting farms in 1942 varied from \$3.40 in Area 7 to \$20.25 in Area 4 (Table 4).

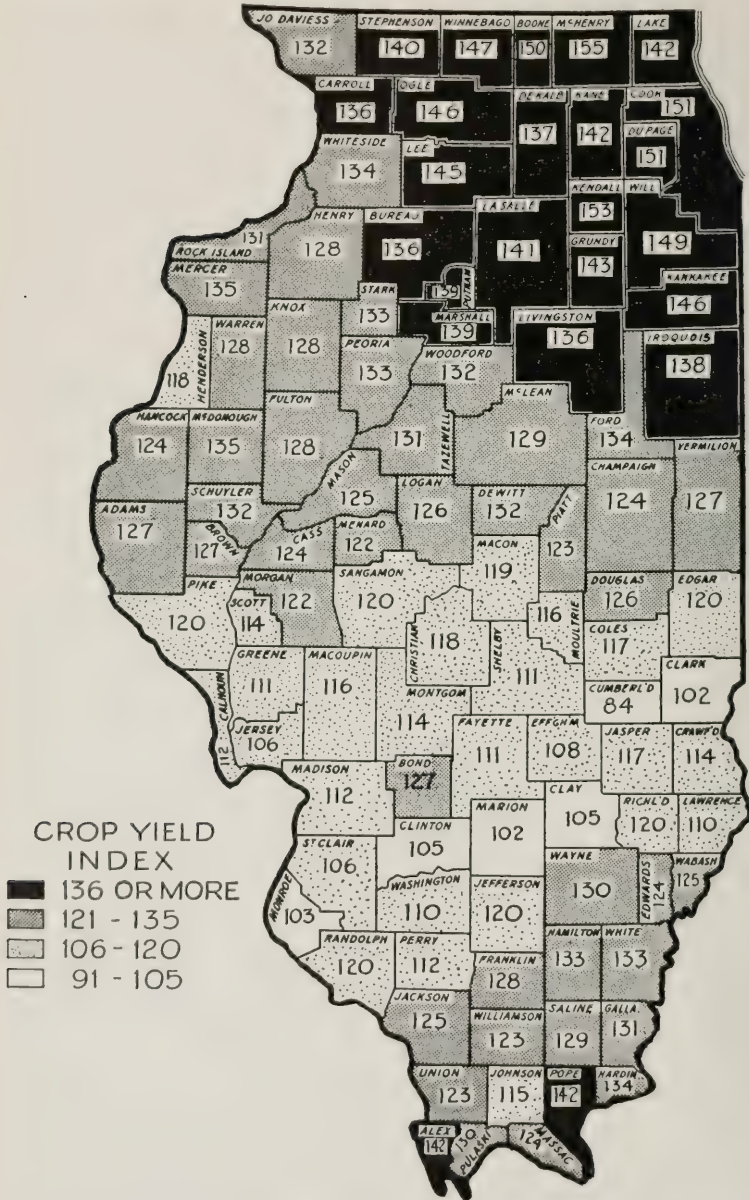


FIG. 3.—CROP YIELDS FOR 1942 COMPARED WITH 10-YEAR AVERAGE YIELDS (1931-1940) FOR THE SAME COUNTY. THE INDEXES ARE BASED ON COUNTY YIELDS OF CORN, OATS, WHEAT, AND SOYBEANS (DATA FROM ILLINOIS COOPERATIVE CROP REPORTING SERVICE)

TABLE 4.—NET CASH INCOME AN ACRE FOR ILLINOIS ACCOUNTING FARMS BY FARMING-TYPE AREAS FOR THE PERIODS 1925-1929 AND 1930-1934 AND FOR THE YEARS 1938, 1939, 1940, 1941, AND 1942

Farming-type areas	1925-1929	1930-1934	1938	1939	1940	1941	1942
Area 1, Chicago Dairy ^a	\$9.59	\$5.25	\$4.97	\$4.04	\$8.66	\$9.05	\$15.71
Area 2, Northwestern Mixed Livestock ^b	7.94	4.92	6.16	5.76	8.71	12.01	16.83
Area 3, Western Livestock and Grain ^b	9.05	4.86	6.88	6.83	8.01	12.49	19.63
Area 4, East-Central Cash Grain ^b	8.91	4.46	6.69	7.08	9.02	13.28	20.25
Area 5, West-Central General Farming.....	6.35	3.23	4.64	4.55	4.68	8.30	13.21
Area 6, St. Louis Dairy and Wheat.....	3.26	2.03	2.84	3.69	4.34	4.82	5.69
Area 7, South-Central Mixed Farming.....	2.21	.91	1.41	1.39	1.81	2.99	3.40
Area 8, Wabash Valley Grain and Livestock.....	4.57	1.73	2.63	4.19	3.11	3.82	7.51
State Average (weighted by acres in each area).....	\$7.13	\$3.74	\$5.25	\$5.40	\$6.82	\$9.91	\$14.99

^aIncludes records from the Farm Bureau Farm Management Service for 1942.

^bIncludes records from the Farm Bureau Farm Management Service for 1938, 1939, 1940, 1941, and 1942.

Net cash incomes were higher in 1942 than in 1941 in all areas. In Area 3, the increase from 1941 to 1942 was \$7.14 or 57 percent, as contrasted to 41c or 14 percent in Area 7, and 87c or 18 percent in Area 6. Crop yields in both 1941 and 1942 were relatively better in Area 3 than in Areas 7 and 6, and the price of hogs advanced more rapidly in 1942 than the price of wheat, dairy products, and poultry products. Hogs are a more important source of income in Area 3 than in Areas 7 or 6, whereas wheat, dairy products, and poultry products are of more importance in Areas 7 and 6 than in Area 3. The net cash income reflects, in part, the crop yields of the preceding year, because a large percentage of grain and livestock sales are from crops harvested during the prior calendar year. The effect of large crop yields in 1941 on net cash earnings in 1942 is apparent in Area 1, where the net cash earnings per acre increased from \$9.05 to \$15.71 or 73 percent.

TABLE 5.—INVENTORY INCREASES BY FARMING-TYPE AREAS, 1942

Farming-type areas	Livestock	Feed and grain	Machinery	Buildings	Land improvements	Total
Area 1.....	\$ 827	\$489	\$ 57	\$232	\$ 83	\$1 688
Area 2.....	1 429	739	147	22	22	2 359
Area 3.....	1 600	792	164	-19	28	2 565
Area 4.....	980	486	178	-9	70	1 705
Area 5.....	840	188	137	7	52	1 224
Area 6.....	329	150	124	-14	40	629
Area 7.....	471	240	97	-8	84	884
Area 8.....	542	379	113	8	64	1 106
Weighted average.....	\$ 919	\$437	\$139	\$ 10	\$57	\$1 562

TABLE 6.—BUSHELS OF CORN AND OATS IN INVENTORIES ON ACCOUNTING FARMS BY FARMING-TYPE AREAS, JANUARY 1, 1942, AND 1943

Farming-type areas	Corn		Oats	
	Jan. 1, 1942	Jan. 1, 1943	Jan. 1, 1942	Jan. 1, 1943
Area 1.....	2 156	2 230	1 011	1 150
Area 2.....	2 776	3 154	987	1 047
Area 3.....	3 988	4 262	844	823
Area 4.....	4 473	4 516	1 153	1 043
Area 5.....	2 505	2 506	498	434
Area 6.....	913	975	356	374
Area 7.....	1 042	1 106	219	210
Area 8.....	1 436	1 714	277	240
Weighted average.....	2 818	2 937	738	710

Inventory changes by farming-type areas. The average inventory increased \$1,562 a farm in 1942. This amount included inventory increases for all the areas and for all the items except buildings in Areas 3, 4, 6, and 7 (Table 5). The inventory increases were largest for livestock and feed and grain, the two items combined accounting for 87 percent of the total inventory increase. The inventory increases for both grains and livestock were the result of increased supplies on hand and higher prices (Table 6).

The increase in inventory of \$139 a farm in 1942 for machinery indicates that farmers were still adding to their equipment, as they had been doing each year since 1935 when earnings reached a level which encour-

TABLE 7.—NET INCOME AN ACRE (INVENTORY BASIS) FOR ILLINOIS ACCOUNTING FARMS BY FARMING-TYPE AREAS FOR THE PERIODS 1925-1929 AND 1930-1934 AND FOR THE YEARS 1938, 1939, 1940, 1941, AND 1942

Farming-type areas	1925-1929	1930-1934	1938	1939	1940	1941	1942
Area 1, Chicago Dairy ^a	\$11.04	\$ 2.64	\$ 8.12	\$ 9.23	\$13.50	\$22.35	\$24.47
Area 2, Northwestern Mixed Livestock ^b	15.11	2.70	8.34	11.45	12.34	23.02	28.26
Area 3, Western Livestock and Grain ^b	10.24	2.84	9.24	13.01	10.66	23.70	29.92
Area 4, East-Central Cash Grain ^b	10.30	2.76	8.66	13.42	9.99	23.85	26.89
Area 5, West-Central General Farming.....	7.69	1.99	6.78	8.79	8.08	17.26	18.08
Area 6, St. Louis Dairy and Wheat.....	5.41	.92	3.71	6.65	6.90	8.95	8.60
Area 7, South-Central Mixed Farming.....	3.34	.55	2.47	3.18	3.36	6.49	6.91
Area 8, Wabash Valley Grain and Livestock.....	5.34	1.20	3.31	5.04	5.22	9.44	12.59
State Average (weighted by acres in each area).....	\$ 8.59	\$ 2.20	\$ 7.14	\$10.33	\$ 9.09	\$18.99	\$21.79

^aArea 1 includes records from the Farm Bureau Farm Management Service for 1942.

^bFor these areas, records from the Farm Bureau Farm Management Service are included for the years 1938, 1939, 1940, 1941, and 1942.

TABLE 8.—PERCENT OF ILLINOIS ACCOUNTING FARMERS RECEIVING AGRICULTURAL CONSERVATION PAYMENTS IN 1942 AND THE PAYMENTS PER FARM AND PER ACRE BY FARMING-TYPE AREAS

Farming-type area	Number of farms	Acres per farm	Percent of farms receiving payments	Payments per farm, all farms	Payments per farm, cooperating farms	Payments per acre, cooperating farms	Taxes per acre, all farms
Area 1.....	155	193	75	\$324	\$433	\$2.24	\$1.54
Area 2.....	484	206	62	326	525	2.55	1.36
Area 3.....	580	249	82	582	706	2.83	1.47
Area 4.....	1 034	257	79	592	746	2.90	1.58
Area 5.....	352	251	72	331	457	1.82	1.26
Area 6.....	320	216	83	235	283	1.31	.86
Area 7.....	147	251	82	188	229	.91	.67
Area 8.....	92	218	84	307	367	1.68	.92
Area 9.....	28	214	89	202	227	1.06	.78

aged the purchase of new equipment. For the most part, purchases of machinery were made early in the year before rationing started.

The \$57 increase in the inventory of land improvements is significant because it indicates relatively large purchases of limestone and rock phosphate. Average building values increased only \$10 because of governmental restrictions on new construction.

Variations in net income an acre with inventory changes included. When inventory changes were included, the average net income an acre on Illinois accounting farms was 15 percent higher in 1942 than in 1941 (Table 7). This increase of 15 percent with inventories included is in contrast with a 51-percent increase on the cash basis. The net income an acre for 1942 was \$5.00 larger on the inventory basis than on the cash basis. Incomes have been larger on the inventory basis than on the cash basis for all years since 1925, with the exceptions of 1930, 1931, and 1932.

Net incomes an acre, on the inventory basis, were higher in 1942 than in 1941 in all areas of the state except in Area 6. The range in net income per acre was from \$6.91 in Area 7 to \$29.92 in Area 3.

Income from agricultural conservation payments. Cash farm incomes of accounting farmers in 1942 included government payments which were received during the accounting year for participation in agricultural conservation programs. In a few cases, delayed payments for 1941, as well as payments for 1942, were included. Of the 28 farms in Area 9, 89 percent received payments (Table 8).

The percent of farms receiving payments in other areas ranged down to 62 in Area 2. The largest payments per farm and per acre were in the areas with the highest investments an acre, Areas 1, 2, 3, and 4. In all the areas, the payments an acre far exceeded the taxes an acre.

Standards for Measuring Operating Efficiency

Farm account studies have repeatedly shown the principal factors affecting relative earnings to be land use, crop yields, amount of livestock, livestock efficiency, labor cost, machinery cost, and prices received for things sold. They have also shown the following facts: (1) that the quality of land affects the cropping system and the crop yields; (2) that the kind of livestock influences the kinds and amounts of feed fed as well as the returns for feed fed; (3) that the size and intensity of the farm business affects practically all the cost items; and (4) that price relationships and quantities of products produced affect the relative profitability of various types of farming for any particular year.

With the foregoing facts in mind, 2,079 farms in Areas 2, 3, 4, and 5 were sorted into groups as indicated in Figures 4, 5, and 6 and in Tables 9 and 10. Similar figures and tables for each of the nine major type-of-farming areas of the state can be found in the area reports for 1942. These reports are available upon request and may be used by any farmer who keeps records to analyze his efficiency.

The terms used in the various figures and tables are the same as those used in the Illinois Farm Account Book. For example, "improved land," a term that is used in Figure 4, means tillable land and land occupied by farmstead, roads, and orchards.

Crop yields. Figure 4 shows the effect of quality of land (expressed as value an acre) on yields of corn, oats, wheat, and soybeans. Land valued at \$40 an acre produced about 44 bushels of corn, 30 bushels of oats, 13 bushels of wheat, and 16 bushels of soybeans; land valued at \$140 an acre produced about 73 bushels of corn, 45 bushels of oats, 17 bushels of wheat, and 25 bushels of soybeans. The differences in acre-yields between \$40 land and \$140 land are as follows: corn, 29 bushels; oats, 15 bushels; wheat, 40 bushels; and soybeans, 9 bushels.

Such variations are significant, but the fact should be kept in mind that they apply only to the conditions which prevailed in 1942. Wheat yields may be higher or lower in relation to corn yields in years with growing conditions different than those in 1942. Data of this type are valuable because they enable farmers to compare the yields on their own farms with those on farms having a similar quality of land.

Source of income. The grouping of accounting farms according to source of income for 1942 gives each farmer an opportunity to compare his farm with the average of other farms having similar sources of income. It also gives him an opportunity to study investments, land use, crop yields, labor requirements, horse and machinery requirements, and other factors that are associated with various types of farming.

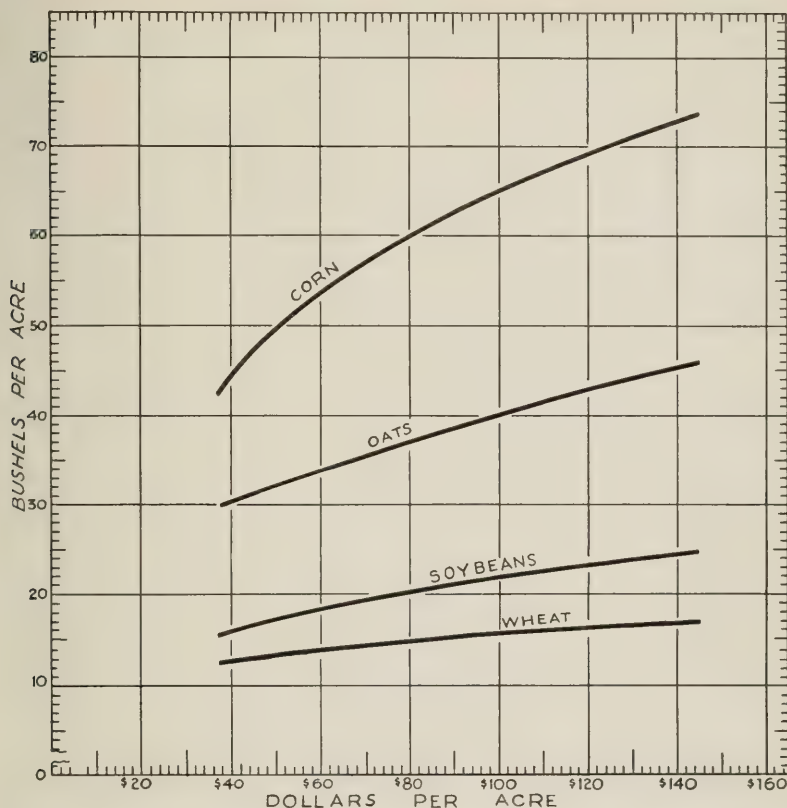


FIG. 4.—AVERAGE YIELDS OF CORN, OATS, WHEAT, AND SOYBEANS WITH VARYING VALUES OF IMPROVED LAND, FARMING-TYPE AREAS, 3, 4, AND 5, 1942

Each farmer, however, should use caution in interpreting the data in Table 9. For example, the fact that hog farms showed the largest rate earned on the investment for 1942 and that dairy farms showed the smallest does not mean such a relationship will prevail over a long period of years. The relative profitability of these enterprises in 1942 was influenced by conditions affecting price and production.

In 1940, the rate earned on investment was largest for cattle farms and smallest for hog farms, as indicated by the following: grain farms, 7.6 percent; dairy farms, 6.8 percent; hog farms, 6.4 percent; cattle farms, 8.2 percent; general farms with more than 60 percent of the income from livestock, 7.1 percent; general farms with less than 60 percent of the income from livestock, 7.0 percent. The change in the relative earnings

TABLE 9.—SOURCE OF INCOME RELATED TO FARM EARNINGS AND OTHER FACTORS
FOR 2,079 ACCOUNTING FARMS IN FARMING-TYPE AREAS 2, 3, 4, AND 5, 1942

Item	Source of income					
	Grain 40% +	Dairy sales 40% +	Hogs 40% +	Cattle 40% +	General farms	
					L.S. 60% -	L.S. 60% +
Number of farms	436	66	971	124	115	367
Percent of income from prod. l.s. . .	34.8	85.7	90.2	93.6	54.5	83.2
Percent of income from crops . . .	56.4	5.5	2.1	.....	34.7	8.2
Investments						
Total per farm	\$43 760	\$27 916	\$36 533	\$65 156	\$38 951	\$37 194
Total per acre	161	156	155	189	155	158
Land per acre	108	81	89	101	97	91
Land improvements per acre . . .	2	2	3	4	3	3
Buildings per acre	14	25	17	20	15	18
Machinery per acre ^a	11	13	11	11	11	11
Earnings						
Per farm						
Gross earnings	\$10 289	\$ 7 162	\$10 469	\$16 968	\$ 9 644	\$ 9 690
Gross expenses ^b	3 715	3 979	3 889	7 312	3 709	3 833
Net earnings	\$ 6 574	\$ 3 183	\$ 6 580	\$ 9 656	\$ 5 935	\$ 5 857
Per acre						
Gross earnings	\$ 37.91	\$ 39.32	\$ 44.54	\$ 49.10	\$ 38.51	\$ 40.96
Gross expenses ^b	13.68	21.48	16.55	21.01	14.89	16.27
Net earnings	\$ 24.23	\$ 17.84	\$ 27.99	\$ 28.09	\$ 23.62	\$ 24.69
Rate earned on investment (percent)	15.1	11.3	18.1	14.9	15.2	15.6
Labor and management earnings	\$ 5 158	\$ 2 580	\$ 5 530	\$ 7 158	\$ 4 789	\$ 4 765
Size and Intensity						
Acres per farm	272	184	237	350	249	236
Percent of land area tillable . . .	89.8	82.3	82.4	84.0	85.7	83.8
Percent tillable land in grain . .	77.5	58.2	66.6	65.5	71.9	66.5
Percent in hay and pasture . . .	20.6	37.7	31.0	30.2	25.4	30.1
Feed fed per acre to prod. l.s. . .	\$ 7.74	\$ 18.67	\$ 22.49	\$ 31.73	\$ 11.71	\$ 19.74
Months of labor per 100 crop A. .	9.9	21.3	14.9	12.3	12.2	14.7
Total months of labor	20.9	24.4	22.8	28.3	21.7	23.2
Crop Yields per Acre						
Corn, bu.	66.3	55.9	66.2	72.5	65.5	64.6
Livestock Returns						
Per \$100 feed fed	\$182	\$187	\$184	\$147	\$188	\$179
Hog returns per litter	193	200	215	196	215	203
Dairy returns per cow	111	194	114	97	127	138
Expense Factors						
Labor cost per crop acre ^b	\$ 6.93	\$ 14.56	\$ 10.63	\$ 9.38	\$ 8.61	\$ 10.59
Horse and machinery cost per crop acre	6.44	10.16	8.19	8.20	7.35	8.16
Land improvements cost per acre . . . . .	.56	.68	.68	.82	.53	.67
Buildings cost per acre	1.04	1.54	1.36	1.52	1.29	1.40
Land tax per acre	1.36	1.10	1.22	1.25	1.24	1.21

^aMachinery includes farm share of automobile.^bExpenses include operator's and family's labor.

of hog farms from 1940 to 1942 clearly reflects the increase in the average price of hogs from \$5.54 to \$13.37.

The following data indicate the average rate earned on investment for the 10-year period, 1926-1935, for farms from the same area grouped ac-

cording to source of income: farms with over 60 percent of their incomes from grain, 4.0 percent; farms with 40-59 percent of their incomes from grain, 3.6 percent; hog farms, 2.8 percent; cattle farms, 3.5 percent; dairy farms, 2.8 percent; and mixed-income farms, 3.1 percent. On the basis of earnings on accounting farms for the past 15 years, the grain farms in Areas 2, 3, 4, and 5 have shown higher current returns than have livestock farms. In these records, no charge was made for fertility losses, and no inference is intended concerning the results if these systems are followed for another 15-year period. The mechanization of farms in this area in recent years has reduced the cost of producing grains more than the cost of producing livestock and livestock products.

When comparing the returns on the various groups of farms per \$100 worth of feed fed, one should consider the fact that the necessary returns per \$100 worth of feed fed to pay for feed (including pasture), labor, equipment, buildings, and other costs vary widely. According to 5-year averages of complete cost studies (1933-1937), the necessary returns were: poultry, \$195; dairy cattle, \$157; hogs, \$127; and feeder cattle, \$117.

Furthermore, when comparing crop yields for the various types of farming, one should note the following items which indicate that the grain farms were located on the better land: (1) high value of land per acre; (2) larger percent of land area tillable; (3) large percent of land in grain; and (4) high land tax per acre.

Differences in expenses are highly significant for the 6 groups of farms. Labor input per 100 crop acres was highest on the dairy farms, where 21.3 months of labor were used, and lowest on the grain farms, where 9.9 months of labor were used. The dairy farmers evidently utilized a large amount of labor to increase the size of their businesses without increasing the size of their farms.

The labor cost per crop acre ranged from \$14.56 on the dairy farms to \$6.93 on the grain farms; the horse and machinery cost per crop acre was highest on the dairy farms, where it averaged \$10.16, and lowest on the grain farms, where it averaged \$6.44; the building cost per acre averaged \$1.54 on the dairy farms and \$1.04 on the grain farms.

Labor, horse and machinery, and improvement costs were higher for all sources of income groups in 1942 than in 1941; labor cost per crop acre, for example, was 21 percent higher on the grain farms in 1942 than in 1941.

Size of farm. When the farm records in Farming-Type Areas 2, 3, 4, and 5 are sorted according to the total acres in the farm, they indicate that the operators on the largest farms took in more money during the year than did those on the smallest ones; and after deductions were made for farm business expenditures and interest on the investment, the 141

TABLE 10.—SIZE OF FARM RELATED TO FARM EARNINGS AND OTHER FACTORS FOR 2,079 ACCOUNTING FARMS IN FARMING-TYPE AREAS 2, 3, 4, AND 5, 1942

Item	Total acres in farm					
	Less than 121	121 to 200	201 to 280	281 to 360	361 to 440	441 or more
Number of farms.....	233	749	533	294	129	141
Acres per farm.....	103	166	242	322	397	577
Investments						
Total per farm.....	\$17 621	\$27 721	\$38 771	\$50 815	\$61 443	\$84 630
Total per acre.....	171	167	160	158	155	147
Land per acre.....	96	97	97	97	95	88
Land improvements per acre..	4	3	3	3	3	3
Buildings per acre.....	22	19	17	16	15	14
Machinery per acre ^a	14	13	11	10	10	9
Earnings						
Per farm						
Gross earnings.....	\$ 5 035	\$ 7 497	\$10 225	\$12 734	\$15 457	\$20 891
Gross expenses ^b	2 299	3 009	3 745	4 585	5 365	7 176
Net earnings.....	\$ 2 736	\$ 4 488	\$ 6 480	\$ 8 149	\$10 092	\$13 715
Per acre						
Gross earnings.....	\$ 48.92	\$ 45.14	\$ 42.25	\$ 39.56	\$ 38.87	\$ 36.30
Gross expenses.....	22.31	18.12	15.48	14.24	13.50	12.49
Net earnings.....	\$ 26.61	\$ 27.02	\$ 26.77	\$ 25.32	\$ 25.37	\$ 23.81
Rate earned on investment (percent).....	15.6	16.2	16.8	16.0	16.4	16.3
Labor and management earnings.....	\$ 2 613	\$ 3 877	\$ 5 323	\$ 6 386	\$ 7 800	\$10 277
Size and Intensity						
Percent of land area tillable...	88.2	87.1	85.6	83.9	81.1	80.7
Percent tillable land in grain...	65.8	68.3	70.1	70.0	71.0	68.9
Percent in hay and pasture....	31.0	29.3	27.5	27.3	25.8	27.5
Feed fed per acre to prod. l.s....	\$ 22.56	\$ 19.74	\$ 17.58	\$ 16.88	\$ 16.34	\$ 16.51
Percent of income from prod. l.s.	82.6	77.2	73.4	72.0	71.9	74.2
Percent of income from crops....	7.2	13.6	18.4	20.0	20.8	18.4
Months of labor per 100 crop A.	21.6	16.2	13.4	11.9	11.3	10.0
Total months of labor.....	15.6	18.9	22.4	26.4	29.6	37.0
Number of work horses.....	2.1	2.6	2.9	3.1	3.5	4.1
Crop Yields per Acre						
Corn, bu.....	66.9	65.9	65.6	65.9	66.8	65.9
Livestock Returns						
Per \$100 feed fed.....	\$190	\$187	\$184	\$177	\$174	\$166
Hog returns per litter.....	195	207	213	212	210	214
Dairy returns per cow.....	125	130	127	124	128	117
Expense Factors						
Labor cost per crop acre.....	\$ 14.83	\$ 11.34	\$ 9.50	\$ 8.45	\$ 8.42	\$ 7.44
Horse and machinery cost per crop acre.....	9.40	8.31	7.66	7.36	7.09	6.87
Land improvements cost per acre.....	.83	.69	.62	.65	.61	.62
Buildings cost per acre.....	1.71	1.41	1.29	1.17	1.17	1.14
Land tax per acre.....	1.33	1.31	1.27	1.24	1.24	1.17

^aMachinery includes farm share of automobile.^bExpenses include operator's and family's labor.

largest farms had labor and management earnings which averaged \$10,277, contrasted with \$2,613 for the 233 smallest farms. The latter had higher investments an acre for improvements, machinery, and total investment, indicating a higher capital input. The rate earned on investment was practically the same for all size groups, but there was a slight increase from the smallest farms up to the size ranging from 121 to 200 acres.

For the 10-year period, 1926-1935, the average rate earned on investment (value of farm products used in the household excluded) for accounting farms by size groups in Areas 3, 4, and 5 was as follows: 0-99 acres, .8 percent; 100-139 acres, 2.0 percent; 140-179 acres, 2.6 percent; 180-219 acres, 2.8 percent; 220-259 acres, 3.0 percent; 260-299 acres, 3.5 percent; 300-339 acres, 3.4 percent; and 340 acres and over, 3.3 percent. In recent years, the rate earned on investment increased as the size of farm increased to about 300 acres, declined slightly for farms ranging from 300 to 400 acres, and increased again for farms ranging from 400 to 600 acres. Those farms that are too large for one tractor but not large enough for two seem to be an awkward size.

In 1942, the smallest farms were operated more intensively than were the largest ones. This variation was indicated by the higher gross earnings an acre, by the larger labor and capital input an acre, and by the larger value of feed fed an acre to productive livestock.

The method used to increase the volume of business depended upon the individual farm. Some farm operators apparently increased the volume of their businesses by improving the quality and increasing the amount of livestock; others, by growing more intensive crops, by increasing crop yields, or by developing special markets; still others, by increasing the acreage operated or by applying combinations of the above methods.

Labor and horse and machinery expenses. The effect of the amount of feed fed an acre to productive livestock on labor and horse and machinery cost per crop acre is shown graphically in Figures 5 and 6.

Four significant things are apparent in these charts: (1) The costs per crop acre increased as the size of the farms decreased; (2) the costs increased as the amount of feed fed per acre increased; (3) the costs decreased much more rapidly when the size of farms increased from 120 acres or less to 201-360 acres than when they increased from 201-360 to 360 acres, or more (this situation is explained in part by the fact that dairy cattle and poultry predominate on the smaller farms and that beef cattle predominate on the larger farms); (4) the costs increased rapidly as the feed fed an acre increased from \$5 to about \$15 an acre; and (5) the costs increased at a less rapid rate but more uniformly from \$15 to \$35 an acre, especially for farms in the larger size groups.

Farmers who know what their cost for labor and for horse and machinery expense per crop acre was in 1942 will find that these data contain a basis for comparing their expenses with averages for other farms of the same size and with the same intensity of livestock.¹

¹Data for other areas of Illinois are available in the area reports for 1942.

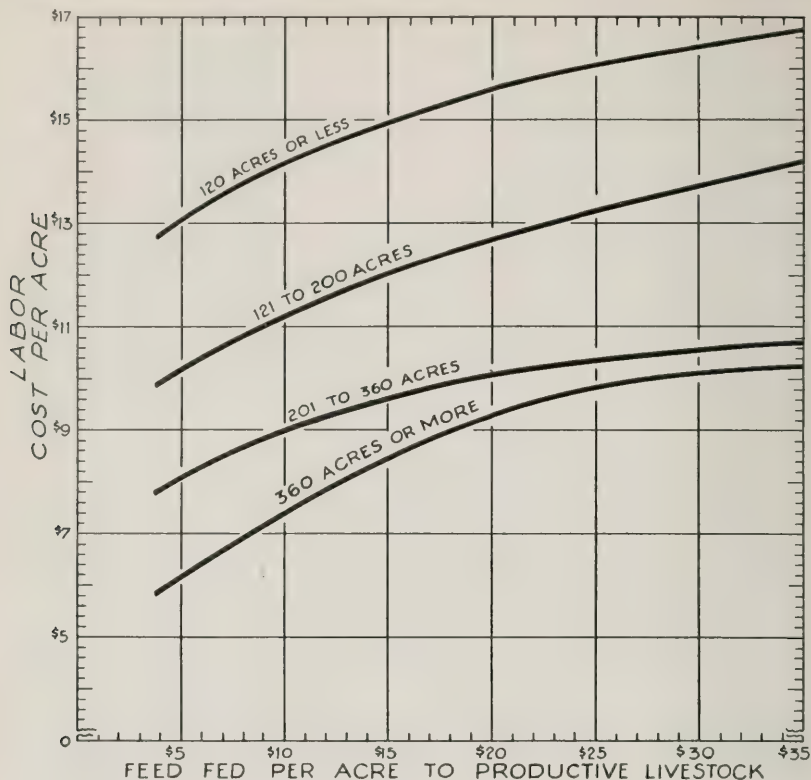


FIG. 5.—LABOR COST PER CROP ACRE FOR FARMS OF VARYING SIZE AND WITH VARYING AMOUNTS OF FEED FED TO PRODUCTIVE LIVESTOCK, FARMING-TYPE AREAS 2, 3, 4, AND 5, 1942

Variations by Farming-Type Areas

The data in Tables 11 and 12 indicate a wide range of farming conditions in Illinois and afford ample evidence of the need for grouping counties by farming-type areas. They show a range in size from 193 acres in Area 1 to 257 acres in Area 4 and an average investment per farm varying from \$12,253 in Area 9 to \$46,695 in Area 4.

Crop yields varied from area to area with the productivity of the soil and with the weather conditions. The relative proportion of income from grain, hogs, cattle, dairy, and poultry varied according to feeds available, markets, labor, and other factors. Expenses per crop acre for labor and for horses and machinery varied with the size of farm, the amount and kind of livestock, the wages for labor, and the type of equipment.

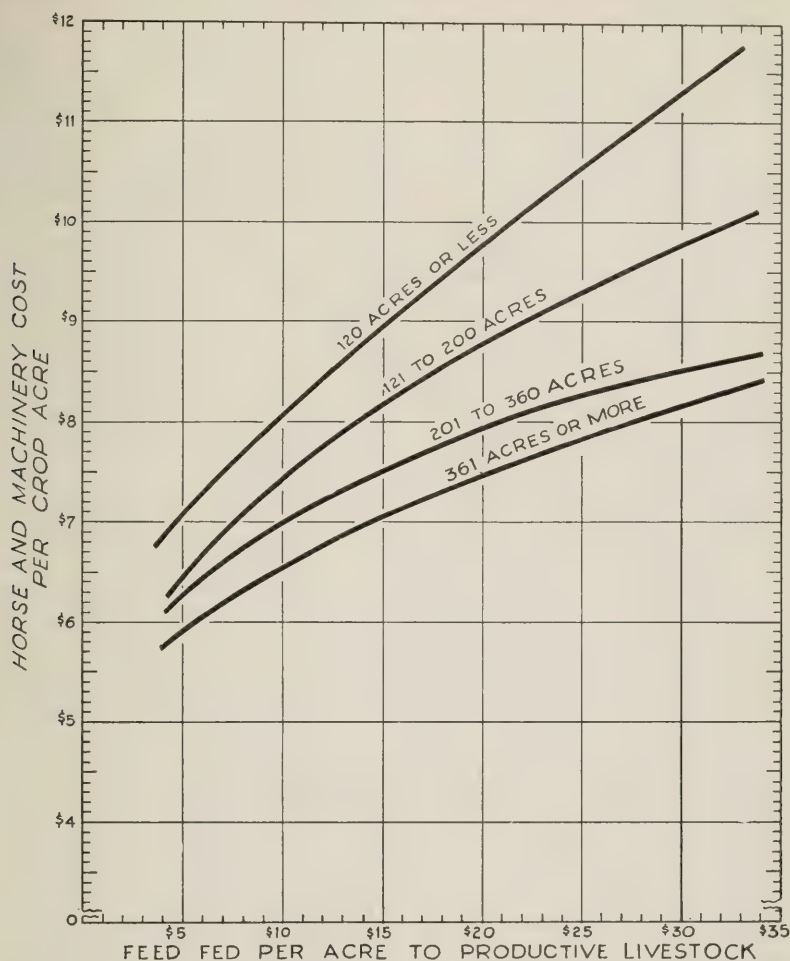


FIG. 6.—HORSE AND MACHINERY COST PER CROP ACRE FOR FARMS OF VARYING SIZE AND WITH VARYING AMOUNTS OF FEED FED TO PRODUCTIVE LIVESTOCK, FARMING-TYPE AREAS 2, 3, 4, AND 5, 1942

Data for Counties and Groups of Counties

Averages were calculated for each county with 30 or more records and for groups of counties with less than 30 records. These averages are arranged in Table 13 according to farming-type areas. The averages for Area 1 are given at the front of the list, and those for Area 9 at the end of it.

TABLE 11.—INVESTMENTS, CASH RECEIPTS, CASH EXPENSES, AND INVENTORY CHANGES
AVERAGES PER FARM BY FARMING-TYPE AREAS, 1942

Item	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9
Capital Investment, Total.									
Land.....	\$38 020	\$35 432	\$41 697	\$46 695	\$30 352	\$19 334	\$15 522	\$17 104	\$12 253
Land improvements.....	17 505	18 418	24 045	29 673	17 319	9 899	8 091	9 384	5 777
Farm buildings.....	666	743	890	804	592	472	502	502	629
Farm buildings.....	7 199	5 231	4 339	4 510	3 066	2 539	1 711	1 744	1 522
Machinery and equipment.....	2 940	2 586	2 806	2 941	2 353	2 135	1 640	1 629	1 470
Feed and grain.....	3 457	3 300	4 222	4 954	3 062	1 915	1 386	1 794	1 223
Livestock, total.....	6 253	5 154	5 395	3 813	3 882	2 374	2 102	2 051	1 632
Cash Receipts, Total.									
Feed and grain.....	\$13 308	\$12 085	\$14 876	\$13 260	\$11 356	\$ 6 204	\$ 5 152	\$ 6 061	\$ 4 277
AAA payments.....	1 096	1 212	2 345	4 693	2 332	1 166	840	1 430	790
Labor and miscellaneous.....	324	326	582	592	331	235	188	307	202
Livestock, total.....	11 549	10 299	11 610	7 636	8 349	4 553	3 923	4 051	3 064
Horses.....	41	29	36	45	48	46	38	46	53
Cattle.....	4 968	4 167	4 138	2 719	2 941	964	1 081	1 080	486
Hogs.....	2 110	3 948	6 075	3 289	3 994	1 369	1 739	2 005	1 203
Sheep.....	110	214	388	270	185	80	161	102	27
Poultry and eggs.....	453	517	423	563	388	614	523	577	522
Dairy sales.....	3 867	1 424	530	750	793	1 480	381	241	773
Cash Expenses, Total.									
Land improvements.....	\$ 9 329	\$ 7 538	\$ 8 943	\$ 7 060	\$ 6 944	\$ 3 799	\$ 3 445	\$ 3 611	\$ 2 691
Farm buildings.....	290	382	212	233	208	170	256	238	159
Farm buildings.....	3 825	2 775	2 098	1 325	2 58	195	131	153	175
Livestock purchases.....	3 333	2 775	2 098	1 890	2 042	562	699	822	384
Feed and grain.....	1 800	1 622	2 518	1 356	1 933	765	766	686	568
Machinery and equipment.....	1 005	1 342	1 607	1 753	1 397	1 129	954	980	708
Hired labor.....	906	540	670	940	348	348	276	333	296
Crop expense.....	271	271	322	271	234	120	120	136	160
Taxes.....	297	280	366	465	366	186	168	201	177
Livestock and miscellaneous.....	222	152	178	154	127	86	75	62	74
Cash Balance	\$ 3 979	\$ 4 547	\$ 5 933	\$ 6 205	\$ 4 412	\$ 2 405	\$ 1 707	\$ 2 450	\$ 1 586
Increase in inventory.....	1 688	2 359	2 565	1 705	1 224	629	884	1 106	743
Total unpaid labor.....	950	1 074	1 039	1 005	1 093	1 174	853	815	778
Net Farm Income.	\$ 4 717	\$ 5 832	\$ 7 459	\$ 6 900	\$ 4 543	\$ 1 860	\$ 1 738	\$ 2 741	\$ 1 551

TABLE 12.—FACTORS HELPING TO ANALYZE THE FARM BUSINESS BY FARMING-TYPE AREAS, 1942

Item	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9
Size of farm, acres.....	193	206	249	257	251	216	251	218	214
Tillable land (percent).....	82	82	80	90	79	81	84	83	72
Inventory Basis									
Gross receipts per acre ^a	\$48.94	\$45.73	\$46.29	\$42.42	\$31.73	\$22.15	\$16.32	\$23.41	\$17.48
Total expense per acre.....	24.47	17.47	16.37	15.53	13.65	13.55	9.41	10.82	10.24
Net receipts per acre.....	\$24.47	\$28.26	\$29.92	\$26.89	\$18.08	\$ 8.60	\$6.91	\$12.59	\$ 7.24
Cash Basis									
Gross receipts per acre.....	\$69.02	\$58.55	\$59.67	\$51.68	\$45.19	\$28.68	\$20.49	\$27.85	\$19.97
Total cash expense per acre ^b	53.31	41.72	40.04	31.43	31.98	22.99	17.09	20.34	16.20
Net cash income per acre.....	\$15.71	\$16.83	\$19.63	\$20.25	\$13.21	\$ 5.69	\$ 3.40	\$ 7.51	\$ 3.77
Acres in: Corn.....	54	57	73	80	55	29	41	44	24
Oats.....	31	35	33	37	22	20	14	12	10
Wheat.....	1	2	4	7	9	28	16	24	18
Soybeans.....	9	11	28	47	37	11	14	21	10
Bushels per acre: Corn.....	71	77	72	68	55	43	38	51	42
Oats.....	61	51	42	44	34	30	22	29	22
Wheat.....	24	26	18	15	12	14	13	16	14
Soybeans.....	13	18	23	22	21	16	14	16	13
Value of feed fed to livestock.....	\$5 348	\$5 164	\$5 975	\$3 876	\$4 067	\$2 399	\$2 045	\$2 145	\$1 568
Returns per \$100 feed fed.....	174	178	181	180	182	191	193	187	217
Feed fed per acre to livestock.....	\$27.74	\$25.02	\$23.97	\$15.11	\$16.18	\$11.09	\$ 8.13	\$ 9.86	\$ 7.32
Returns per acre from livestock.....	48.31	44.65	43.34	27.26	29.52	21.24	15.70	18.46	15.91
Horse and machinery cost per crop acre.....	\$11.19	\$ 8.51	\$ 8.52	\$ 7.26	\$ 7.52	\$ 7.72	\$ 5.80	\$ 5.85	\$ 7.77
Labor cost per crop acre.....	14.15	11.62	10.32	8.21	10.57	11.85	8.07	8.48	10.59
Value of land per acre.....	\$ 91	\$ 89	\$ 96	\$ 116	\$ 69	\$ 46	\$ 32	\$ 43	\$ 27
Value of land improvements per acre.....	3	4	4	3	2	2	2	2	3
Value of buildings per acre.....	37	25	17	18	12	12	7	8	7
Total investment per acre.....	197	172	167	182	121	89	62	79	57
Number of farms included.....	155	484	580	1 034	352	320	147	92	28

^aFarm products used in household excluded.^bIncludes charge for unpaid labor.

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942

Accounting Item	McHenry	Boone	Kane	Lake, Cook, DuPage
Capital investment, total.....	1 \$33 197	\$35 040	\$50 613	\$33 865
Land.....	2 14 515	17 116	22 271	16 563
Land improvements.....	3 511	676	900	607
Farm buildings.....	4 7 142	5 597	9 369	6 492
Horses.....	5 334	327	348	305
Cattle.....	6 4 352	4 082	7 918	3 512
Hogs.....	7 499	932	1 101	647
Sheep.....	8 19	192	46	53
Poultry.....	9 173	126	110	150
Feed and grain.....	10 2 846	3 161	4 996	2 923
Machinery and equipment.....	11 2 806	2 831	3 554	2 613
Income, net increases, total.....	12 \$ 9 434	\$ 9 304	\$12 904	\$ 8 036
Cattle.....	13 950	1 737	5 738	1 268
Dairy sales.....	14 5 670	3 619	2 717	3 258
Hogs.....	15 1 536	2 551	3 362	2 032
Sheep.....	16 16	160	47	24
Poultry and eggs.....	17 515	376	374	487
Farm products used in household.....	18 338	310	326	346
Feed and grain.....	19	152	.....	255
AAA payment.....	20 372	352	283	294
Labor and miscellaneous.....	21 37	47	57	72
Expenses, net decreases, total.....	22 \$ 3 697	\$ 2 906	\$ 5 366	\$ 3 424
Land improvements.....	23 177	195	266	189
Farm buildings.....	24 516	471	779	532
Feed and grain.....	25 165	.....	987	.....
Machinery and equipment.....	26 1 249	1 123	1 588	1 147
Hired labor.....	27 1 029	677	1 147	1 024
Taxes.....	28 280	266	346	294
Livestock and miscellaneous.....	29 281	174	253	238
Receipts less expenses.....	30 \$ 5 737	\$ 6 398	\$ 7 538	\$ 4 612
Unpaid labor.....	31 985	1 059	896	882
Net farm earnings.....	32 \$ 4 752	\$ 5 339	\$ 6 642	\$ 3 730
Rate earned on investment, percent.....	33 14.3	15.2	13.1	11.0
Labor and management earnings.....	34 \$ 3 768	\$ 4 395	\$ 4 835	\$ 2 693
Excess of sales over expenses.....	35 3 616	4 312	5 652	2 625
Increase in inventory.....	36 1 783	1 776	1 560	1 641
Number of farms included.....	37 43	31	38	43
Size of farm, acres.....	38 190	206	213	168
Gross earnings per acre.....	39 \$ 49.60	\$ 45.23	\$ 60.47	\$ 47.92
Total expenses per acre.....	40 24.62	19.27	29.34	25.68
Net earnings per acre.....	41 \$ 24.98	\$ 25.96	\$ 31.13	\$ 22.24
Value of land per acre.....	42 \$ 76	\$ 83	\$104	\$ 99
Value of improved land per acre.....	43 84	88	109	104
Value of buildings per acre.....	44 38	27	44	39
Total investment per acre.....	45 175	170	237	202
Percent of land area tillable.....	46 76.4	82.6	86.0	82.5
Percent of tillable land in—				
Corn.....	47 31.9	34.2	38.4	32.5
Oats.....	48 17.4	20.4	20.7	20.6
Wheat.....	49 .4	.8	.5	.8
Soybeans for grain.....	50 2.1	3.5	7.0	9.0
Other cultivated crops.....	51 7.1	8.3	6.7	5.4
Legume hay and pasture.....	52 27.0	21.7	17.9	19.9
Nonlegume hay and pasture.....	53 14.1	11.1	8.8	11.8
Bushels per acre: Corn.....	54 64.0	70.5	81.8	63.4
Oats.....	55 60.8	56.5	63.9	59.9
Wheat.....	56 26.7	22.9	27.0	21.8
Barley.....	57 38.1	26.8	37.3	40.3
Soybeans.....	58 8.1	8.3	15.3	14.3
Feed fed per acre.....	59 \$ 23.58	\$ 24.31	\$ 37.74	\$ 24.26
Returns for \$100 feed fed.....	60 200	174	155	180
Poultry returns per hen.....	61 4.01	5.44	4.26	4.14
Number of litters farrowed.....	62 8.6	15.8	18.7	13.9
Returns per litter.....	63 \$209	\$184	\$206	\$193
Dairy returns per cow.....	64 203	177	185	197
Horse and machinery cost per crop acre.....	65 \$ 12.63	\$ 9.34	\$ 11.18	\$ 11.36
Labor cost per crop acre.....	66 16.77	12.36	12.21	15.34
Land improvements cost per acre.....	67 .93	.95	1.25	1.13
Farm buildings cost per acre.....	68 2.71	2.29	3.65	3.17
Taxes per acre.....	69 1.47	1.29	1.62	1.75

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

	De Kalb	Stephen- son	Lee	Ogle	Rock Island	Winne- bago	Whiteside	Jo Daviess
1	\$46 613	\$26 570	\$49 642	\$31 237	\$27 140	\$32 298	\$30 454	\$25 681
2	25 532	12 113	28 985	16 183	14 512	13 676	14 662	12 293
3	861	513	920	765	673	856	564	745
4	6 386	4 811	5 736	4 766	3 770	6 335	4 704	4 271
5	250	244	211	248	215	292	223	323
6	4 550	2 861	3 677	2 997	1 765	3 244	3 229	2 736
7	1 402	993	1 557	1 302	1 256	1 278	1 375	1 082
8	131	38	310	78	85	217	87	102
9	142	147	114	109	144	137	138	129
10	4 343	2 426	5 032	2 656	2 487	3 397	2 946	1 935
11	3 016	2 424	3 100	2 133	2 233	2 866	2 526	2 065
12	\$11 706	\$ 8 633	\$13 293	\$ 8 954	\$ 8 283	\$ 9 328	\$ 9 668	\$ 8 373
13	4 109	1 414	2 849	2 624	1 334	2 057	2 411	1 667
14	1 177	2 365	942	1 127	790	2 417	1 522	1 641
15	4 705	3 837	5 457	4 028	4 586	3 704	4 346	3 886
16	125	40	240	43	61	165	69	96
17	511	507	478	444	511	496	486	478
18	308	311	346	296	392	314	364	356
19	261	.....	2 306	140	335	.....	.....	.....
20	476	135	610	232	235	143	423	207
21	34	24	65	20	39	32	47	42
22	\$ 3 227	\$ 2 728	\$ 3 238	\$ 2 221	\$ 1 967	\$ 2 436	\$ 2 784	\$ 2 930
23	204	105	230	146	118	194	120	137
24	478	278	432	287	267	372	321	283
25	.....	624	.....	.....	.....	65	401	832
26	1 266	861	1 307	834	886	959	1 015	787
27	747	489	755	501	276	442	498	527
28	328	213	344	297	290	270	249	220
29	204	158	170	156	130	134	180	144
30	\$ 8 479	\$ 5 905	\$10 055	\$ 6 733	\$ 6 316	\$ 6 892	\$ 6 884	\$ 5 443
31	1 022	1 132	990	1 057	1 120	1 150	1 070	1 126
32	\$ 7 457	\$ 4 773	\$ 9 065	\$ 5 676	\$ 5 196	\$ 5 742	\$ 5 814	\$ 4 317
33	16.0	18.0	18.3	18.2	19.1	17.8	19.1	16.8
34	\$ 5 922	\$ 4 258	\$ 7 375	\$ 4 895	\$ 4 647	\$ 4 950	\$ 5 083	\$ 3 817
35	4 765	3 942	7 262	3 748	3 865	5 060	4 301	3 721
36	3 406	1 652	2 447	2 689	2 059	1 518	2 219	1 366
37	130	77	49	42	55	33	30	40
38	211	171	259	195	188	235	193	237
39	\$ 55.58	\$ 50.48	\$ 51.26	\$ 45.99	\$ 43.99	\$ 39.74	\$ 50.09	\$ 35.31
40	20.17	22.57	16.30	16.84	16.40	15.28	19.97	17.10
41	\$ 35.41	\$ 27.91	\$ 34.96	\$ 29.15	\$ 27.59	\$ 24.46	\$ 30.12	\$ 18.21
42	\$121	\$ 71	\$112	\$ 83	\$ 77	\$ 58	\$ 76	\$ 52
43	124	73	116	90	86	64	80	62
44	30	28	22	24	20	27	24	18
45	221	155	191	160	144	138	158	108
46	91.8	82.2	88.2	78.7	75.9	76.2	86.1	58.3
47	36.9	27.7	35.9	34.3	37.4	30.1	32.1	26.3
48	21.1	21.5	22.4	24.9	16.0	19.7	18.5	19.2
49	.8	.3	.7	.1	1.9	1.0	4.2	.8
50	8.5	2.6	9.9	4.8	7.1	5.4	7.8	.4
51	5.7	5.1	2.5	3.1	1.9	6.4	3.2	5.6
52	16.3	30.4	21.7	23.0	26.9	25.9	20.2	28.0
53	10.7	12.4	6.9	9.8	8.8	11.5	14.0	19.7
54	79.4	72.4	80.3	76.7	73.4	70.0	78.9	70.7
55	56.0	46.8	56.5	52.7	40.1	46.0	46.9	41.4
56	26.2	25.0	28.8	20.0	18.5	21.2	31.6	17.3
57	32.6	23.1	12.5	29.2	15.7	34.6	31.2	30.0
58	16.8	16.7	22.9	18.2	18.7	9.6	16.3	13.3
59	\$ 31.05	\$ 25.93	\$ 21.61	\$ 24.69	\$ 21.04	\$ 21.32	\$ 27.31	\$ 16.31
60	166	189	182	176	191	181	173	208
61	4.80	4.01	4.22	4.51	4.32	4.31	4.24	3.95
62	24.0	18.3	22.8	18.8	21.6	19.1	20.3	18.0
63	\$221	\$222	\$257	\$230	\$210	\$225	\$226	\$224
64	154	147	138	131	110	161	146	121
65	\$ 8.58	\$ 9.16	\$ 7.61	\$ 7.95	\$ 9.11	\$ 7.71	\$ 8.92	\$ 9.77
66	10.48	14.66	8.96	12.19	12.20	11.01	11.76	16.42
67	.97	.61	.89	.75	.63	.83	.62	.58
68	2.27	1.63	1.67	1.47	1.42	1.58	1.66	1.19
69	1.56	1.25	1.33	1.53	1.54	1.15	1.29	.93

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

Accounting Item	Carroll	Henry	McDon- ough	Knox
Capital investment, total.....	1 \$28 564	\$44 922	\$38 704	\$43 099
Land.....	2 13 631	24 787	22 945	24 343
Land improvements.....	3 684	926	1 061	1 018
Farm buildings.....	4 4 332	5 281	3 895	4 658
Horses.....	5 299	219	184	209
Cattle.....	6 3 390	4 081	2 191	3 118
Hogs.....	7 1 117	2 222	1 828	1 713
Sheep.....	8 352	141	67	174
Poultry.....	9 164	141	113	95
Feed and grain.....	10 2 602	4 082	3 777	4 730
Machinery and equipment.....	11 1 993	3 042	2 643	3 041
Income, net increases, total.....	12 \$ 8 703	\$13 464	\$11 707	\$12 761
Cattle.....	13 2 375	3 921	2 558	2 606
Dairy sales.....	14 926	498	364	678
Hogs.....	15 4 124	7 350	7 187	6 367
Sheep.....	16 141	159	52	148
Poultry and eggs.....	17 540	490	464	348
Farm products used in household.....	18 319	382	400	400
Feed and grain.....	19 .....	.....	265	1 501
AAA payment.....	20 263	633	385	659
Labor and miscellaneous.....	21 15	31	32	54
Expenses, net decreases, total.....	22 \$ 2 607	\$ 4 452	\$ 2 801	\$ 3 163
Land improvements.....	23 123	171	173	187
Farm buildings.....	24 333	389	324	380
Feed and grain.....	25 797	1 214	.....	.....
Machinery and equipment.....	26 747	1 267	1 219	1 268
Hired labor.....	27 250	803	595	730
Taxes.....	28 223	409	310	415
Livestock and miscellaneous.....	29 134	199	180	183
Receipts less expenses.....	30 \$ 6 096	\$ 9 012	\$ 8 906	\$ 9 598
Unpaid labor.....	31 1 082	1 083	1 051	985
Net farm earnings.....	32 \$ 5 014	\$ 7 929	\$ 7 855	\$ 8 613
Rate earned on investment, percent.....	33 17.6	17.6	20.3	20.0
Labor and management earnings.....	34 \$ 4 371	\$ 6 452	\$ 6 684	\$ 7 231
Excess of sales over expenses.....	35 3 838	5 865	5 851	6 081
Increase in inventory.....	36 1 939	2 765	2 655	3 117
Number of farms included.....	37 28	82	66	53
Size of farm, acres.....	38 183	238	219	271
Gross earnings per acre.....	39 \$ 47.63	\$ 56.57	\$ 53.41	\$ 47.07
Total expenses per acre.....	40 20.19	23.25	17.57	15.30
Net earnings per acre.....	41 \$ 27.44	\$ 33.32	\$ 35.84	\$ 31.77
Value of land per acre.....	42 \$ 75	\$104	\$105	\$ 90
Value of improved land per acre.....	43 81	111	114	103
Value of buildings per acre.....	44 24	22	18	17
Total investment per acre.....	45 156	189	177	159
Percent of land area tillable.....	46 80.0	82.9	84.6	78.3
Percent of tillable land in—				
Corn.....	47 32.8	38.4	35.3	34.6
Oats.....	48 21.6	17.3	14.3	15.1
Wheat.....	49 .1	.9	4.0	1.2
Soybeans for grain.....	50 3.2	8.9	18.9	17.5
Other cultivated crops.....	51 4.1	2.4	1.9	2.2
Legume hay and pasture.....	52 28.2	22.2	19.4	21.2
Nonlegume hay and pasture.....	53 10.0	9.9	6.2	8.2
Bushels per acre: Corn.....	54 73.1	73.0	75.2	71.1
Oats.....	55 49.6	44.9	44.2	38.4
Wheat.....	56 25.0	22.9	13.4	19.2
Barley.....	57 25.6	.....	.....	.....
Soybeans.....	58 18.1	16.8	25.3	24.0
Feed fed per acre.....	59 \$ 26.52	\$ 30.65	\$ 27.60	\$ 20.34
Returns for \$100 feed fed.....	60 172	174	181	190
Poultry returns per hen.....	61 3.90	3.99	4.86	4.08
Number of litters farrowed.....	62 18.9	35.9	32.7	31.1
Returns per litter.....	63 \$233	\$217	\$211	\$216
Dairy returns per cow.....	64 119	111	100	112
Horse and machinery cost per crop acre.....	65 \$ 7.95	\$ 9.24	\$ 8.70	\$ 7.94
Labor cost per crop acre.....	66 11.66	12.01	10.47	9.48
Land improvements cost per acre.....	67 .67	.72	.79	.69
Farm buildings cost per acre.....	68 1.82	1.63	1.48	1.40
Taxes per acre.....	69 1.22	1.72	1.41	1.53

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

	Bureau	Marshall-Putnam	Peoria	Fulton	Hancock	Mercer	Warren	Stark
1	\$43 987	\$52 014	\$39 269	\$32 933	\$33 156	\$45 634	\$43 617	\$39 970
2	25 008	31 559	23 238	19 607	19 518	24 366	25 807	23 492
3	1 002	889	815	764	631	932	1 043	624
4	4 895	4 874	4 465	3 225	3 014	4 532	4 705	4 064
5	193	166	237	182	272	311	315	165
6	3 064	3 183	2 231	2 041	2 698	4 318	2 482	1 732
7	1 858	2 184	1 516	1 566	1 311	1 947	2 072	1 770
8	297	626	192	165	126	148	138	854
9	172	111	134	95	77	174	110	110
10	4 628	5 396	3 837	2 829	3 311	6 002	4 213	4 378
11	2 870	3 026	2 604	2 459	2 198	2 904	2 732	2 781
12	\$12 145	\$14 979	\$11 360	\$ 9 132	\$ 8 786	\$13 367	\$13 288	\$10 574
13	2 637	3 141	1 925	1 465	1 791	3 810	2 883	925
14	813	647	519	536	710	528	429	502
15	6 488	8 265	6 139	5 407	4 731	6 772	8 018	5 271
16	178	369	137	160	146	76	216	364
17	586	362	437	411	290	420	323	386
18	377	336	369	368	312	402	360	312
19	412	1 050	1 187	492	534	487	250	2 110
20	594	754	578	247	223	766	773	612
21	60	55	69	46	49	106	36	92
22	\$ 2 816	\$ 3 458	\$ 2 707	\$ 2 799	\$ 2 401	\$ 3 465	\$ 3 186	\$ 2 832
23	230	243	167	137	148	169	224	128
24	365	410	342	296	248	388	379	391
25	1 116	1 415	1 095	1 189	1 025	1 379	1 336	1 243
26	603	753	618	631	569	824	724	579
27	304	405	319	391	281	474	329	336
28	198	232	166	155	130	231	194	155
29	\$ 9 329	\$11 521	\$ 8 653	\$ 6 333	\$ 6 385	\$ 9 902	\$10 102	\$ 7 742
30	1 024	1 051	1 004	1 078	1 078	1 080	976	996
31	\$ 8 305	\$10 470	\$ 7 649	\$ 5 255	\$ 5 307	\$ 8 822	\$ 9 126	\$ 6 746
32	18.9	20.1	19.5	16.0	16.0	19.3	20.9	16.9
33	\$ 6 853	\$ 8 648	\$ 6 413	\$ 4 391	\$ 4 395	\$ 7 315	\$ 7 718	\$ 5 531
34	6 260	8 129	5 712	4 655	4 879	7 353	6 074	5 950
35	2 692	3 056	2 572	1 310	1 194	2 147	3 668	1 480
36								
37	52	44	47	53	30	29	35	41
38	228	284	228	250	229	295	259	223
39	\$ 53.31	\$ 52.72	\$ 49.84	\$ 36.51	\$ 38.35	\$ 45.37	\$ 51.25	\$ 47.37
40	16.85	15.87	16.28	15.50	15.19	15.43	16.05	17.15
41	\$ 36.46	\$ 36.85	\$ 33.56	\$ 21.01	\$ 23.16	\$ 29.94	\$ 35.20	\$ 30.22
42	\$110	\$111	\$102	\$ 78	\$ 85	\$ 83	\$100	\$105
43	115	126	113	93	95	96	110	111
44	21	17	20	13	13	15	18	18
45	193	183	172	132	145	155	168	179
46	86.8	80.0	81.4	72.6	81.4	74.8	79.8	85.9
47	38.4	36.9	35.2	30.9	26.6	38.3	40.2	39.6
48	19.9	19.4	17.3	13.4	13.3	13.8	17.8	19.8
49	1.6	2.4	1.5	6.7	5.4	1.2	.8	.1
50	7.3	13.9	14.3	18.7	18.8	10.7	10.1	14.9
51	2.1	2.4	2.7	1.8	4.0	3.2	1.6	1.0
52	21.0	20.0	22.1	23.1	19.9	21.8	21.3	16.9
53	9.7	5.0	6.9	5.4	12.0	11.0	8.2	7.7
54	77.1	78.3	70.3	65.2	67.8	72.1	71.9	71.1
55	46.3	46.7	41.4	40.1	39.7	39.3	40.7	40.4
56	25.2	20.4	22.1	15.6	19.8	19.6	25.3	10.0
57	15.7	16.7	...	...	...	15.0	...	...
58	20.3	22.8	20.5	21.3	36.8	23.7	20.4	20.9
59	\$ 26.93	\$ 23.31	\$ 21.60	\$ 18.73	\$ 21.18	\$ 22.22	\$ 24.52	\$ 18.86
60	179	197	192	177	163	182	191	183
61	4.20	4.21	4.68	5.42	4.22	4.35	4.07	4.28
62	29.3	38.8	27.8	32.0	23.4	33.8	36.8	24.3
63	\$239	\$234	\$220	\$186	\$206	\$196	\$231	\$215
64	116	131	115	105	116	133	122	105
65	\$ 7.77	\$ 8.03	\$ 8.07	\$ 8.64	\$ 8.19	\$ 8.98	\$ 9.04	\$ 8.37
66	9.91	9.17	10.03	11.06	10.79	10.50	9.95	9.37
67	1.01	.86	.73	.55	.65	.57	.86	.57
68	1.60	1.44	1.50	1.18	1.08	1.32	1.46	1.75
69	1.33	1.43	1.40	1.56	1.23	1.61	1.27	1.51

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

Accounting Item		Hender- son	McLean	Tazewell	Ford
Capital investment, total.....	1	\$41 904	\$53 683	\$48 951	\$48 432
Land.....	2	23 544	33 256	30 244	31 305
Land improvements.....	3	790	825	952	781
Farm buildings.....	4	3 686	5 517	4 742	3 960
Horses.....	5	334	223	232	255
Cattle.....	6	3 784	3 332	2 590	2 453
Hogs.....	7	2 026	1 403	1 135	691
Sheep.....	8	287	200	296	268
Poultry.....	9	94	115	150	128
Feed and grain.....	10	4 279	5 833	5 526	5 780
Machinery and equipment.....	11	3 080	2 979	3 084	2 811
Income, net increases, total.....	12	\$13 370	\$13 345	\$12 975	\$10 462
Cattle.....	13	4 419	2 728	1 978	2 055
Dairy sales.....	14	224	707	1 081	430
Hogs.....	15	6 994	5 071	4 315	2 515
Sheep.....	16	213	156	382	140
Poultry and eggs.....	17	320	413	509	499
Farm products used in household.....	18	328	340	415	325
Feed and grain.....	19	.....	3 169	3 518	3 838
AAA payment.....	20	828	720	732	630
Labor and miscellaneous.....	21	44	41	45	30
Expenses, net decreases, total.....	22	\$ 4 585	\$ 3 460	\$ 3 184	\$ 2 715
Land improvements.....	23	176	162	170	130
Farm buildings.....	24	389	374	346	300
Feed and grain.....	25	1 004	.....	.....	.....
Machinery and equipment.....	26	1 496	1 395	1 286	1 271
Hired labor.....	27	906	860	754	512
Taxes.....	28	407	467	444	371
Livestock and miscellaneous.....	29	207	202	184	131
Receipts less expenses.....	30	\$ 8 785	\$ 9 885	\$ 9 791	\$ 7 747
Unpaid labor.....	31	1 042	915	1 003	997
Net farm earnings.....	32	\$ 7 743	\$ 8 970	\$ 8 788	\$ 6 750
Rate earned on investment, percent.....	33	18.5	16.7	18.0	13.9
Labor and management earnings.....	34	\$ 6 444	\$ 7 010	\$ 7 129	\$ 5 121
Excess of sales over expenses.....	35	4 942	8 058	7 451	6 342
Increase in inventory.....	36	3 515	1 487	1 925	1 080
Number of farms included.....	37	48	95	64	54
Size of farm, acres.....	38	298	269	253	259
Gross earnings per acre.....	39	\$ 44.93	\$ 49.59	\$ 51.22	\$ 40.33
Total expenses per acre.....	40	18.91	16.26	16.53	14.31
Net earnings per acre.....	41	\$ 26.02	\$ 33.33	\$ 34.69	\$ 26.02
Value of land per acre.....	42	\$ 79	\$124	\$119	\$121
Value of improved land per acre.....	43	92	125	125	121
Value of buildings per acre.....	44	12	20	19	15
Total investment per acre.....	45	141	199	193	187
Percent of land area tillable.....	46	77.6	92.2	87.0	95.0
Percent of tillable land in—					
Corn.....	47	36.2	39.4	33.9	38.8
Oats.....	48	15.3	17.8	13.2	21.3
Wheat.....	49	1.4	1.0	6.4	.3
Soybeans for grain.....	50	13.9	16.6	17.8	14.1
Other cultivated crops.....	51	4.2	1.6	4.3	1.9
Legume hay and pasture.....	52	19.0	16.4	17.6	17.0
Nonlegume hay and pasture.....	53	10.0	7.2	6.8	6.6
Bushels per acre: Corn.....	54	62.2	68.5	76.5	60.0
Oats.....	55	37.5	44.3	40.1	42.9
Wheat.....	56	17.5	16.2	17.1	20.0
Barley.....	57	.....	.....	.....	10.0
Soybeans.....	58	18.2	24.4	21.9	22.3
Feed fed per acre.....	59	\$ 24.88	\$ 19.50	\$ 17.26	\$ 13.54
Returns for \$100 feed fed.....	60	168	178	196	168
Poultry returns per hen.....	61	4.61	4.43	4.73	4.26
Number of litters farrowed.....	62	33.0	24.4	20.5	13.2
Returns per litter.....	63	\$211	\$218	\$215	\$198
Dairy returns per cow.....	64	91	131	160	108
Horse and machinery cost per crop acre.....	65	\$ 8.99	\$ 7.35	\$ 7.76	\$ 6.81
Labor cost per crop acre.....	66	10.36	8.27	9.28	7.27
Land improvements cost per acre.....	67	.59	.60	.67	.50
Farm buildings cost per acre.....	68	1.31	1.39	1.37	1.16
Taxes per acre.....	69	1.37	1.74	1.75	1.43

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

	Living- ston	Woodford	La Salle	Cham- paign	Iroquois	Vermilion	Macon	Sangamon
1	\$49 524	\$49 606	\$57 606	\$46 266	\$39 162	\$40 844	\$54 127	\$44 741
2	31 104	30 998	33 871	33 074	24 129	26 397	37 643	29 278
3	1 086	887	1 047	396	1 139	971	579	843
4	4 839	4 766	6 848	3 527	4 206	3 915	4 218	3 590
5	249	251	161	157	255	217	273	250
6	1 932	2 952	3 441	1 179	1 455	1 667	1 942	3 249
7	907	1 204	1 425	592	550	849	763	1 226
8	315	362	242	84	359	73	97	101
9	240	210	161	108	150	107	132	92
10	5 799	5 199	6 936	4 362	4 468	3 742	5 423	3 540
11	3 053	2 777	3 474	2 787	2 451	2 906	3 057	2 572
12	\$10 982	\$11 507	\$14 213	\$10 231	\$ 9 504	\$10 765	\$11 918	\$11 571
13	1 286	2 021	2 792	863	1 105	1 016	1 817	3 581
14	640	614	1 111	571	489	716	502	576
15	2 820	4 527	5 358	2 121	2 505	3 536	2 663	4 782
16	101	269	170	45	302	65	65	105
17	1 084	688	552	398	548	433	422	308
18	388	398	375	310	297	345	340	390
19	3 939	2 298	3 031	5 475	3 778	4 113	5 374	1 078
20	683	663	756	413	426	496	698	671
21	41	29	68	35	54	45	37	80
22	\$ 2 862	\$ 3 026	\$ 3 727	\$ 2 429	\$ 2 502	\$ 3 144	\$ 3 165	\$ 3 055
23	185	136	243	98	272	207	117	140
24	323	325	464	262	287	260	328	357
25								
26	1 258	1 243	1 539	1 162	995	1 419	1 484	1 275
27	563	675	859	369	474	676	583	734
28	354	452	391	437	359	449	518	388
29	179	195	231	101	115	133	135	161
30	\$ 8 120	\$ 8 481	\$10 486	\$ 7 802	\$ 7 002	\$ 7 621	\$ 8 753	\$ 8 516
31	934	983	1 015	979	1 032	994	1 052	1 045
32	\$ 7 186	\$ 7 498	\$ 9 471	\$ 6 823	\$ 5 970	\$ 6 627	\$ 7 701	\$ 7 471
33	14.5	15.1	16.4	14.7	15.2	16.2	14.2	16.7
34	\$ 5 471	\$ 5 747	\$ 7 347	\$ 5 282	\$ 4 822	\$ 5 349	\$ 5 804	\$ 6 017
35	6 207	7 063	7 487	6 332	5 090	4 719	6 685	4 782
36	1 525	1 020	2 624	1 160	1 615	2 557	1 728	3 344
37	58	74	60	61	45	46	32	38
38	232	237	260	246	235	260	284	264
39	\$ 47.42	\$ 48.47	\$ 54.71	\$ 41.61	\$ 40.48	\$ 41.37	\$ 42.00	\$ 43.76
40	16.39	16.89	18.25	13.86	15.05	15.90	14.86	15.50
41	\$ 31.03	\$ 31.58	\$ 36.46	\$ 27.75	\$ 25.43	\$ 25.47	\$ 27.14	\$ 28.26
42	\$134	\$131	\$130	\$134	\$103	\$101	\$133	\$111
43	136	138	136	137	106	104	135	115
44	21	20	26	14	18	15	15	14
45	214	209	222	188	167	157	191	169
46	92.4	88.8	89.2	93.1	89.9	91.1	93.2	86.5
47	40.0	36.5	39.5	33.2	34.3	32.5	32.0	31.2
48	22.3	20.4	20.6	13.0	18.5	11.3	9.9	11.1
49	1.1	1.6	1.0	.9	1.0	4.1	3.5	5.4
50	14.4	10.9	11.4	32.4	18.3	25.3	30.9	23.1
51	2.3	6.3	1.6	1.4	4.2	3.5	.3	1.4
52	15.9	17.0	20.0	10.5	17.1	14.8	14.6	17.6
53	4.0	7.3	5.9	8.6	6.6	8.5	8.8	10.2
54	69.2	72.0	79.3	67.4	62.1	63.7	65.8	65.4
55	49.5	47.4	49.7	39.4	44.2	37.2	36.7	41.4
56	24.8	14.5	25.0	14.5	24.8	17.3	10.8	12.7
57	10.0	...	17.1	20.0	15.0	...	...	5.0
58	19.2	19.0	20.8	25.4	21.5	22.6	23.6	23.5
59	\$ 14.43	\$ 19.91	\$ 21.69	\$ 8.95	\$ 11.42	\$ 12.74	\$ 11.01	\$ 21.41
60	186	178	182	193	193	182	184	171
61	5.27	4.51	4.54	4.40	4.53	4.85	4.20	4.15
62	13.6	23.6	26.2	11.8	11.7	14.6	13.7	27.3
63	\$222	\$214	\$223	\$207	\$236	\$243	\$213	\$184
64	125	129	140	114	118	111	119	110
65	\$ 7.60	\$ 7.86	\$ 8.42	\$ 6.28	\$ 6.38	\$ 7.56	\$ 7.22	\$ 7.50
66	7.96	9.21	9.28	6.72	8.30	8.04	7.13	9.13
67	.80	.57	.94	.40	1.16	.80	.41	.53
68	1.39	1.37	1.79	1.07	1.22	1.00	1.16	1.35
69	1.53	1.90	1.50	1.78	1.53	1.73	1.83	1.47

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

Accounting Item	Kankakee	Menard	Will	De Witt, Piatt
Capital investment, total.....	1 \$42 292	\$37 453	\$40 674	\$52 990
Land.....	2 25 662	23 660	22 574	35 395
Land improvements.....	3 823	429	962	676
Farm buildings.....	4 4 690	3 808	5 649	4 324
Horses.....	5 162	251	186	242
Cattle.....	6 2 220	1 511	3 259	2 183
Hogs.....	7 521	1 344	564	941
Sheep.....	8 19	82	25	328
Poultry.....	9 176	154	166	105
Feed and grain.....	10 4 758	3 753	4 137	5 385
Machinery and equipment.....	11 3 261	2 461	3 152	3 411
Income, net increases, total.....	12 \$ 9 866	\$ 9 824	\$ 9 460	\$12 607
Cattle.....	13 1 174	1 565	2 250	1 608
Dairy sales.....	14 1 502	270	1 517	645
Hogs.....	15 2 162	5 089	1 685	3 296
Sheep.....	16 27	86	18	114
Poultry and eggs.....	17 555	497	764	409
Farm products used in household.....	18 291	344	288	383
Feed and grain.....	19 3 464	1 459	2 489	5 347
AAA payment.....	20 637	486	397	731
Labor and miscellaneous.....	21 54	28	52	74
Expenses, net decreases, total.....	22 \$ 2 982	\$ 2 728	\$ 3 093	\$ 3 118
Land improvements.....	23 254	93	159	137
Farm buildings.....	24 322	312	387	307
Feed and grain.....	25 .....	.....	.....	.....
Machinery and equipment.....	26 1 378	1 207	1 337	1 351
Hired labor.....	27 557	561	786	692
Taxes.....	28 312	392	275	488
Livestock and miscellaneous.....	29 159	163	149	143
Receipts less expenses.....	30 \$ 6 884	\$ 7 096	\$ 6 367	\$ 9 489
Unpaid labor.....	31 1 005	941	989	1 109
Net farm earnings.....	32 \$ 5 879	\$ 6 155	\$ 5 378	\$ 8 380
Rate earned on investment, percent.....	33	16.4	13.2	15.8
Labor and management earnings.....	34 \$ 4 515	\$ 5 038	\$ 4 080	\$ 6 515
Excess of sales over expenses.....	35 4 860	5 421	3 625	7 314
Increase in inventory.....	36 1 733	1 331	2 454	1 792
Number of farms included.....	37 52	27	53	34
Size of farm, acres.....	38 253	248	220	308
Gross earnings per acre.....	39 \$ 38.98	\$ 39.66	\$ 42.98	\$ 40.93
Total expenses per acre.....	40 15.75	14.81	18.55	13.72
Net earnings per acre.....	41 \$ 23.23	\$ 24.85	\$ 24.43	\$ 27.21
Value of land per acre.....	42 \$101	\$ 96	\$103	\$115
Value of improved land per acre.....	43 103	98	105	121
Value of buildings per acre.....	44 19	15	26	14
Total investment per acre.....	45 167	151	185	172
Percent of land area tillable.....	46 90.6	86.6	90.1	88.0
Percent of tillable land in—				
Corn.....	47 33.7	30.4	35.0	31.8
Oats.....	48 16.5	11.8	20.2	14.7
Wheat.....	49 1.8	9.9	2.4	3.5
Soybeans for grain.....	50 23.7	20.2	17.9	25.4
Other cultivated crops.....	51 2.9	1.0	3.8	1.0
Legume hay and pasture.....	52 15.4	15.5	12.9	15.0
Nonlegume hay and pasture.....	53 6.0	11.2	7.8	8.6
Bushels per acre: Corn.....	54 62.9	65.6	66.8	67.1
Oats.....	55 43.1	38.0	52.7	37.5
Wheat.....	56 20.5	11.3	23.8	17.8
Barley.....	57 .....	.....	30.0	.....
Soybeans.....	58 16.3	23.5	18.7	27.0
Feed fed per acre.....	59 \$ 12.50	\$ 17.54	\$ 17.77	\$ 11.54
Returns for \$100 feed fed.....	60 179	179	165	180
Poultry returns per hen.....	61 4.75	4.17	4.85	4.94
Number of litters farrowed.....	62 13.0	28.8	8.2	17.5
Returns per litter.....	63 \$215	\$186	\$233	\$202
Dairy returns per cow.....	64 179	84	186	108
Horse and machinery cost per crop acre.....	65 \$ 7.39	\$ 7.83	\$ 8.34	\$ 6.23
Labor cost per crop acre.....	66 7.52	8.66	9.73	7.62
Land improvements cost per acre.....	67 1.00	.38	.72	.44
Farm buildings cost per acre.....	68 1.27	1.26	1.76	1.00
Taxes per acre.....	69 1.23	1.58	1.25	1.58

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

	Kendall	Coles, Edgar, Douglas	Moultrie	Logan	Mason	Cass	Grundy
1	\$43 583	\$49 678	\$46 269	\$43 498	\$27 931	\$36 344	\$48 773
2	24 861	33 128	32 733	28 885	18 206	23 703	29 969
3	954	783	498	526	387	489	1 046
4	6 141	3 829	3 369	3 738	2 409	2 304	5 400
5	229	221	192	246	218	300	278
6	2 717	1 996	1 641	1 932	613	1 696	1 506
7	1 510	1 098	490	1 014	416	1 161	763
8	143	119	72	67	8	105	14
9	183	117	114	154	207	117	183
10	4 235	5 144	4 402	3 863	2 994	3 997	6 494
11	2 610	3 243	2 758	3 073	2 473	2 472	3 120
12	\$11 324	\$11 681	\$10 311	\$10 483	\$ 7 027	\$ 9 497	\$12 760
13	1 995	1 802	986	1 513	447	1 625	908
14	1 174	468	789	355	320	277	1 268
15	5 129	4 043	1 676	3 577	1 666	3 979	2 705
16	76	79	65	50	17	69	16
17	728	446	352	492	667	494	630
18	291	338	322	328	284	373	321
19	1 353	4 014	5 628	3 794	3 102	2 021	6 074
20	531	439	463	348	489	652	804
21	47	52	30	26	35	7	34
22	\$ 2 802	\$ 3 228	\$ 2 890	\$ 2 757	\$ 1 882	\$ 2 490	\$ 2 904
23	183	169	108	103	95	109	226
24	433	286	253	284	148	200	353
25	.....	.....	.....	.....	.....	.....	.....
26	1 093	1 419	1 314	1 316	879	1 065	1 315
27	565	748	620	520	329	580	518
28	323	456	477	416	324	370	313
29	205	150	118	118	107	166	179
30	\$ 8 522	\$ 8 453	\$ 7 421	\$ 7 726	\$ 5 145	\$ 7 007	\$ 9 856
31	967	1 048	1 053	1 064	978	1 198	1 112
32	\$ 7 555	\$ 7 405	\$ 6 368	\$ 6 662	\$ 4 167	\$ 5 809	\$ 8 744
33	17.3	14.9	13.8	15.3	14.9	16.0	17.9
34	\$ 6 142	\$ 5 654	\$ 4 816	\$ 5 282	\$ 3 550	\$ 4 764	\$ 7 078
35	5 241	6 465	6 682	5 865	3 854	5 083	8 514
36	2 990	1 650	417	1 533	1 007	1 551	1 021
37	34	58	37	33	31	26	20
38	209	279	291	250	289	282	264
39	\$ 54.18	\$ 41.88	\$ 35.45	\$ 41.97	\$ 24.33	\$ 33.74	\$ 48.41
40	18.03	15.33	13.56	15.30	9.90	13.10	15.24
41	\$ 36.15	\$ 26.55	\$ 21.89	\$ 26.67	\$ 14.43	\$ 20.64	\$ 33.17
42	\$119	\$119	\$113	\$116	\$ 63	\$ 84	\$114
43	123	122	119	119	67	96	119
44	29	14	12	15	8	8	20
45	209	178	159	174	97	129	185
46	88.9	91.0	88.9	91.7	88.8	77.0	88.5
47	35.7	32.1	31.1	31.8	27.7	29.2	40.1
48	25.0	10.2	10.5	14.6	10.2	11.9	19.9
49	.4	2.9	2.2	4.6	18.2	8.5	.7
50	13.7	30.0	32.9	22.7	11.5	21.0	20.9
51	2.9	1.6	1.9	1.0	10.9	6.7	1.1
52	14.9	16.3	15.2	16.9	17.8	16.2	15.0
53	7.4	6.9	6.2	8.4	3.7	6.5	2.3
54	76.5	65.0	59.4	70.4	51.8	67.6	74.8
55	59.2	35.6	35.6	42.2	30.6	34.8	50.0
56	28.6	19.6	12.6	10.4	8.7	15.1	31.9
57	.....	20.0	.....	.....	.....	5.0	.....
58	16.7	23.3	24.2	26.6	18.0	20.3	20.8
59	\$ 23.45	\$ 14.72	\$ 7.95	\$ 13.85	\$ 6.56	\$ 13.29	\$ 10.65
60	190	173	178	181	177	181	206
61	5.38	4.96	3.79	3.91	5.07	4.31	4.60
62	25.7	19.8	12.4	17.7	10.0	20.7	14.4
63	\$215	\$208	\$183	\$199	\$217	\$191	\$212
64	166	106	125	87	107	90	151
65	\$ 7.51	\$ 7.23	\$ 6.30	\$ 7.62	\$ 5.00	\$ 7.24	\$ 6.99
66	9.10	8.14	7.33	8.30	6.17	10.03	7.64
67	.88	.61	.37	.41	.33	.39	.86
68	2.07	1.03	.87	1.14	.51	.71	1.34
69	1.55	1.63	1.64	1.67	1.12	1.31	1.19

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—Continued

Accounting Item	Morgan	Macoupin	Shelby	Christian	
Capital investment, total.	1	\$38 200	\$31 246	\$27 317	\$38 158
Land.	2	24 910	15 428	16 738	24 414
Land improvements.	3	544	827	440	606
Farm buildings.	4	2 895	3 971	2 533	3 084
Horses.	5	281	258	176	168
Cattle.	6	2 363	3 672	1 481	2 585
Hogs.	7	1 188	849	437	871
Sheep.	8	89	122	72	67
Poultry.	9	103	129	125	124
Feed and grain.	10	3 243	3 195	2 874	3 535
Machinery and equipment.	11	2 584	2 795	2 441	2 704
Income, net increases, total.	12	\$10 594	\$ 8 723	\$ 6 671	\$ 9 736
Cattle.	13	1 980	2 376	739	2 195
Dairy sales.	14	607	1 458	1 025	629
Hogs.	15	4 977	3 498	1 747	3 486
Sheep.	16	98	136	82	84
Poultry and eggs.	17	373	561	436	386
Farm products used in household.	18	382	306	331	319
Feed and grain.	19	1 739	.....	1 969	2 077
AAA payment.	20	378	332	309	512
Labor and miscellaneous.	21	60	56	33	48
Expenses, net decreases, total.	22	\$ 2 393	\$ 3 020	\$ 2 211	\$ 2 755
Land improvements.	23	115	175	127	187
Farm buildings.	24	260	274	206	277
Feed and grain.	25	.....	524	.....	.....
Machinery and equipment.	26	1 016	1 055	1 055	1 209
Hired labor.	27	516	581	412	558
Taxes.	28	352	274	304	382
Livestock and miscellaneous.	29	134	137	107	142
Receipts less expenses.	30	\$ 8 201	\$ 5 703	\$ 4 460	\$ 6 981
Unpaid labor.	31	1 081	1 271	1 106	1 003
Net farm earnings.	32	\$ 7 120	\$ 4 432	\$ 3 354	\$ 5 978
Rate earned on investment, percent.	33	18.6	14.2	12.3	15.7
Labor and management earnings.	34	\$ 6 011	\$ 3 663	\$ 2 789	\$ 4 824
Excess of sales over expenses.	35	5 636	5 228	3 337	5 118
Increase in inventory.	36	2 183	169	792	1 544
Number of farms included.	37	37	31	43	40
Size of farm, acres.	38	248	258	246	247
Gross earnings per acre.	39	\$ 42.70	\$ 33.84	\$ 27.12	\$ 39.43
Total expenses per acre.	40	14.00	16.65	13.48	15.22
Net earnings per acre.	41	\$ 28.70	\$ 17.19	\$ 13.64	\$ 24.21
Value of land per acre.	42	\$100	\$ 60	\$ 68	\$ 99
Value of improved land per acre.	43	107	66	73	100
Value of buildings per acre.	44	12	15	10	12
Total investment per acre.	45	154	121	111	155
Percent of land area tillable.	46	85.1	79.1	82.7	92.6
Percent of tillable land in—					
Corn.	47	30.9	22.2	28.4	26.8
Oats.	48	10.9	8.7	9.8	7.3
Wheat.	49	9.1	5.3	1.3	4.3
Soybeans for grain.	50	21.8	16.5	22.4	36.6
Other cultivated crops.	51	1.2	9.8	7.2	2.4
Legume hay and pasture.	52	15.0	21.9	18.4	13.4
Nonlegume hay and pasture.	53	11.1	15.6	12.5	9.2
Bushels per acre: Corn.	54	69.5	49.4	46.0	62.0
Oats.	55	38.7	31.1	26.9	36.4
Wheat.	56	11.8	13.1	13.7	13.2
Barley.	57	.....	14.0	.....	12.0
Soybeans.	58	25.0	23.4	17.4	19.9
Feed fed per acre.	59	\$ 18.40	\$ 17.90	\$ 9.39	\$ 16.83
Returns for \$100 feed fed.	60	183	179	186	169
Poultry returns per hen.	61	4.31	4.81	3.79	3.64
Number of litters farrowed.	62	26.7	17.6	11.6	15.8
Returns per litter.	63	\$198	\$219	\$190	\$217
Dairy returns per cow.	64	119	155	132	110
Horse and machinery cost per crop acre.	65	\$ 6.84	\$ 8.14	\$ 7.27	\$ 6.90
Labor cost per crop acre.	66	9.07	11.92	9.24	7.81
Land improvements cost per acre.	67	.46	.68	.52	.76
Farm buildings cost per acre.	68	1.05	1.06	.84	1.12
Taxes per acre.	69	1.42	1.06	1.24	1.55

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

	Montgomery	Adams	Schuyler, Scott, Brown	Jersey	Greene	Pike	Madison	Randolph
1	\$23 073	\$27 160	\$27 650	\$27 656	\$33 495	\$30 191	\$19 915	\$16 842
2	12 765	14 102	15 638	14 432	18 031	15 349	9 866	8 281
3	479	723	724	664	963	928	388	495
4	2 655	3 243	2 737	3 217	3 586	3 183	2 651	2 407
5	284	277	282	244	339	328	290	326
6	1 691	2 154	1 760	2 174	3 280	3 081	1 752	1 319
7	707	1 185	1 218	926	993	2 251	407	331
8	271	207	169	78	140	172	18	50
9	107	97	72	121	96	76	133	148
10	2 317	2 991	3 003	3 128	3 660	2 822	2 193	1 635
11	1 797	2 181	2 047	2 672	2 407	2 001	2 217	1 850
12	\$ 6 880	\$ 7 938	\$ 8 008	\$ 7 172	\$ 8 880	\$12 628	\$ 5 360	\$ 4 885
13	1 609	1 714	1 475	963	2 550	2 675	747	951
14	596	499	257	1 698	1 143	375	2 154	963
15	3 425	4 495	4 525	3 396	3 937	8 466	1 331	1 352
16	143	124	95	54	103	194	18	80
17	399	383	259	447	309	260	515	548
18	326	354	328	362	366	360	309	347
19	104	.....	729	.....	.....	.....	.....	386
20	256	324	313	200	388	249	235	217
21	22	45	27	52	84	49	51	41
22	\$ 1 823	\$ 2 416	\$ 2 340	\$ 2 922	\$ 2 958	\$ 4 310	\$ 1 863	\$ 1 543
23	127	178	124	158	154	185	124	111
24	206	241	244	276	218	258	217	162
25	.....	335	.....	291	435	1 972	10	.....
26	805	861	872	1 010	959	803	844	736
27	332	411	597	705	676	648	366	286
28	240	260	392	286	377	286	182	171
29	113	130	111	196	139	158	120	77
30	\$ 5 057	\$ 5 522	\$ 5 668	\$ 4 250	\$ 5 922	\$ 8 318	\$ 3 497	\$ 3 342
31	1 081	1 087	1 013	1 175	1 120	1 048	1 256	1 158
32	\$ 3 976	\$ 4 435	\$ 4 655	\$ 3 075	\$ 4 802	\$ 7 270	\$ 2 241	\$ 2 184
33	17.2	16.3	16.8	11.1	14.3	24.1	11.3	13.0
34	\$ 3 601	\$ 3 842	\$ 4 052	\$ 2 478	\$ 3 908	\$ 6 550	\$ 1 955	\$ 2 060
35	3 337	3 824	4 036	3 844	4 802	5 517	2 799	1 965
36	1 394	1 344	1 304	44	754	2 441	389	1 030
37	39	39	39	27	29	28	73	55
38	201	241	273	239	284	295	177	227
39	\$ 34.21	\$ 32.90	\$ 29.38	\$ 30.00	\$ 31.31	\$ 42.85	\$ 30.28	\$ 21.48
40	14.44	14.52	12.30	17.14	14.38	18.18	17.62	11.88
41	\$ 19.77	\$ 18.38	\$ 17.08	\$ 12.86	\$ 16.93	\$ 24.67	\$ 12.66	\$ 9.60
42	\$ 63	\$ 58	\$ 57	\$ 60	\$ 64	\$ 52	\$ 56	\$ 36
43	68	66	72	68	73	61	58	40
44	13	13	10	13	13	11	15	11
45	115	113	101	116	118	102	113	74
46	85.7	75.2	66.8	83.1	71.4	70.9	80.3	82.0
47	23.8	21.6	29.4	29.2	32.3	32.0	21.3	12.6
48	11.5	15.5	14.2	9.9	8.9	12.9	9.4	11.3
49	3.5	5.1	5.8	6.8	2.8	1.8	17.0	20.8
50	23.9	16.7	14.5	6.7	11.2	3.3	4.3	4.1
51	5.9	3.2	4.2	9.8	8.4	4.9	9.9	12.0
52	17.9	24.2	21.3	24.8	27.8	27.5	27.6	32.0
53	13.5	13.7	10.6	12.8	8.6	17.6	10.5	7.2
54	54.5	58.8	61.4	40.8	46.3	56.9	46.8	47.6
55	32.8	36.5	41.9	27.1	26.8	32.4	31.9	28.3
56	8.2	12.5	11.7	14.6	10.7	10.5	14.3	14.4
57	.....	.....	.....	8.4	.....	10.0	13.5	17.7
58	21.4	21.0	18.4	19.0	20.3	17.4	19.5	18.3
59	\$ 18.18	\$ 16.58	\$ 13.14	\$ 15.87	\$ 16.20	\$ 21.85	\$ 14.84	\$ 9.86
60	176	187	192	181	181	190	191	185
61	3.66	4.73	3.97	4.21	4.05	3.70	4.03	3.96
62	16.1	21.7	22.8	22.0	23.8	43.4	9.1	8.7
63	\$210	\$217	\$196	\$181	\$173	\$200	\$182	\$213
64	108	98	77	159	139	95	184	114
65	\$ 7.42	\$ 7.92	\$ 7.53	\$ 8.67	\$ 8.09	\$ 7.48	\$ 9.39	\$ 6.89
66	10.51	11.35	11.63	13.30	12.26	12.63	14.48	11.03
67	.63	.74	.45	.66	.54	.63	.70	.49
68	1.02	1.00	.90	1.15	.77	.88	1.23	.71
69	1.19	1.08	1.44	1.20	1.33	.97	1.03	.75

(Continued)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Continued*

Accounting Item	St. Clair	Monroe	Bond	Clinton	
Capital investment, total	1	\$24 312	\$21 843	\$21 070	\$20 837
Land	2	13 036	12 642	10 305	10 551
Land improvements	3	377	335	861	382
Farm buildings	4	3 456	2 637	2 852	2 552
Horses	5	445	354	220	341
Cattle	6	1 372	922	1 878	1 683
Hogs	7	514	461	554	499
Sheep	8	24	58	118	25
Poultry	9	186	199	109	241
Feed and grain	10	2 377	2 097	1 934	1 975
Machinery and equipment	11	2 525	2 138	2 239	2 588
Income, net increases, total	12	\$ 5 654	\$ 5 485	\$ 6 667	\$ 5 834
Cattle	13	742	366	906	664
Dairy sales	14	1 337	878	1 889	2 197
Hogs	15	2 057	1 477	2 771	1 518
Sheep	16	34	77	149	27
Poultry and eggs	17	721	778	386	779
Farm products used in household	18	434	417	286	439
Feed and grain	19	113	1 124		
AAA payment	20	189	348	233	174
Labor and miscellaneous	21	27	20	47	36
Expenses, net decreases, total	22	\$ 2 094	\$ 1 980	\$ 2 753	\$ 1 895
Land improvements	23	118	73	173	96
Farm buildings	24	289	269	224	187
Feed and grain	25			666	145
Machinery and equipment	26	936	817	915	834
Hired labor	27	397	468	447	343
Taxes	28	236	226	219	180
Livestock and miscellaneous	29	118	127	109	110
Receipts less expenses	30	\$ 3 560	\$ 3 505	\$ 3 914	\$ 3 939
Unpaid labor	31	1 295	1 217	974	1 174
Net farm earnings	32	\$ 2 265	\$ 2 288	\$ 2 940	\$ 2 765
Rate earned on investment, percent	33	9.3	10.5	14.0	13.3
Labor and management earnings	34	\$ 1 787	\$ 1 961	\$ 2 570	\$ 2 455
Excess of sales over expenses	35	2 479	2 601	2 761	2 968
Increase in inventory	36	647	487	867	532
Number of farms included	37	31	22	28	30
Size of farm, acres	38	214	226	282	176
Gross earnings per acre	39	\$ 26.45	\$ 24.32	\$ 23.65	\$ 33.17
Total expenses per acre	40	15.85	14.17	13.22	17.45
Net earnings per acre	41	\$ 10.60	\$ 10.15	\$ 10.43	\$ 15.72
Value of land per acre	42	\$ 61	\$ 56	\$ 37	\$ 60
Value of improved land per acre	43	66	65	40	65
Value of buildings per acre	44	16	12	10	15
Total investment per acre	45	114	97	75	118
Percent of land area tillable	46	82.1	77.9	74.2	83.6
Percent of tillable land in—					
Corn	47	18.9	18.0	15.6	17.9
Oats	48	12.3	8.8	12.1	18.2
Wheat	49	18.1	26.9	6.7	15.7
Soybeans for grain	50	7.2	3.7	7.6	6.9
Other cultivated crops	51	11.7	13.9	15.3	10.0
Legume hay and pasture	52	23.6	23.1	29.1	21.4
Nonlegume hay and pasture	53	8.2	5.6	13.6	9.9
Bushels per acre: Corn	54	47.8	41.7	36.6	45.9
Oats	55	28.4	28.2	27.0	37.2
Wheat	56	14.9	15.0	12.3	12.3
Barley	57	11.5	22.8	20.0	12.0
Soybeans	58	16.3	12.7	19.2	17.5
Feed fed per acre	59	\$ 11.96	\$ 8.76	\$ 11.89	\$ 17.04
Returns for \$100 feed fed	60	205	196	189	185
Poultry returns per hen	61	4.34	3.83	3.40	3.28
Number of litters farrowed	62	12.8	11.1	14.9	10.1
Returns per litter	63	\$201	\$157	\$234	\$192
Dairy returns per cow	64	149	131	159	179
Horse and machinery cost per crop acre	65	\$ 9.20	\$ 7.86	\$ 7.52	\$ 8.79
Labor cost per crop acre	66	12.90	12.28	10.23	12.35
Land improvements cost per acre	67	.55	.32	.61	.55
Farm buildings cost per acre	68	1.35	1.19	.79	1.06
Taxes per acre	69	1.10	1.00	.78	1.02

(Concluded)

TABLE 13.—SUMMARY OF BUSINESS RECORDS FROM 3,192 ILLINOIS FARMS BY COUNTIES AND BY GROUPS OF COUNTIES, 1942—*Concluded*

	Washing- ton	Effingham, Fayette	Franklin, Hamilton, Jefferson, William- son	Clark, Crawford, Jasper	Clay, Richland, Wayne, Marion	Edwards	Wabash, Lawrence, White, Gallatin	Union, Jackson, Perry, Massac, Pulaski, Alexander
1	\$17 012	\$16 595	\$13 984	\$18 824	\$13 715	\$15 073	\$19 316	\$12 253
2	9 507	8 174	7 076	9 943	7 176	8 202	10 672	5 777
3	331	620	667	517	608	496	509	629
4	2 110	1 991	1 661	2 030	1 471	1 407	2 111	1 522
5	301	239	245	192	205	270	209	300
6	1 009	1 314	1 051	1 376	1 094	934	1 176	852
7	182	309	348	718	308	516	530	314
8	78	139	91	28	183	101	69	39
9	161	202	139	168	139	175	127	127
10	1 486	1 671	1 120	2 034	1 009	1 571	2 035	1 223
11	1 847	1 936	1 586	1 818	1 522	1 401	1 878	1 470
12	\$ 4 052	\$ 4 552	\$ 4 430	\$ 5 652	\$ 3 420	\$ 5 128	\$ 5 730	\$ 4 088
13	447	711	827	1 147	673	724	867	473
14	1 051	1 024	242	423	436	135	357	773
15	574	1 123	1 789	2 730	1 010	2 140	2 034	1 354
16	44	167	121	28	218	97	82	28
17	594	608	398	610	496	679	429	511
18	300	336	353	344	312	308	326	345
19	747	311	526	96	62	706	1 296	376
20	272	247	131	241	181	304	311	202
21	23	25	43	33	32	35	28	26
22	\$ 1 428	\$ 1 610	\$ 1 539	\$ 1 653	\$ 1 385	\$ 1 387	\$ 1 713	\$ 1 414
23	145	161	238	138	156	200	145	128
24	129	158	158	133	129	104	162	125
25	.....	.....	.....	.....	.....	.....	.....	.....
26	687	703	699	743	625	543	740	613
27	237	328	238	339	247	299	371	296
28	151	167	149	190	162	184	221	167
29	79	93	57	110	66	57	74	85
30	\$ 2 624	\$ 2 942	\$ 2 891	\$ 3 999	\$ 2 035	\$ 3 741	\$ 4 017	\$ 2 674
31	1 257	1 029	830	890	836	804	828	778
32	\$ 1 367	\$ 1 913	\$ 2 061	\$ 3 109	\$ 1 199	\$ 2 937	\$ 3 189	\$ 1 896
33	8.0	11.5	14.7	16.5	8.7	19.5	16.5	15.5
34	\$ 1 252	\$ 1 758	\$ 1 932	\$ 2 779	\$ 1 107	\$ 2 778	\$ 2 804	\$ 1 853
35	1 741	2 062	1 561	2 894	794	2 201	2 723	1 586
36	583	544	977	761	929	1 232	968	743
37	32	49	38	50	59	48	44	28
38	223	243	268	241	250	207	229	214
39	\$ 18.15	\$ 18.76	\$ 16.55	\$ 23.47	\$ 13.68	\$ 24.77	\$ 25.01	\$ 19.09
40	12.03	10.88	8.85	10.56	8.88	10.58	11.09	10.24
41	\$ 6.12	\$ 7.88	\$ 7.70	\$ 12.91	\$ 4.80	\$ 14.19	\$ 13.92	\$ 8.85
42	\$ 43	\$ 34	\$ 26	\$ 41	\$ 29	\$ 40	\$ 47	\$ 27
43	45	37	27	45	30	42	50	31
44	9	8	6	8	6	7	9	7
45	76	68	52	78	55	73	84	57
46	84.7	79.8	86.4	81.8	83.6	82.1	83.9	72.0
47	11.3	18.7	17.0	24.1	17.7	22.9	25.2	15.8
48	13.6	10.9	6.4	7.2	6.6	9.8	3.7	6.3
49	25.1	3.5	9.2	7.7	6.0	11.8	15.3	11.6
50	4.2	12.7	5.1	11.3	4.1	10.7	12.3	6.7
51	12.7	12.4	13.7	12.6	15.2	10.1	11.0	18.6
52	23.7	19.6	25.5	22.4	16.4	22.3	21.6	31.4
53	9.4	22.2	23.1	14.7	34.0	12.4	10.9	9.6
54	36.9	36.6	36.0	45.4	29.3	52.8	49.4	42.4
55	32.7	26.9	21.5	25.8	20.2	28.9	27.6	22.0
56	14.3	8.4	15.8	10.1	12.6	17.9	13.9	14.0
57	11.3	3.3	10.6	13.8	9.7	17.3	12.6	14.2
58	12.8	13.0	15.1	14.4	11.2	16.2	16.7	13.4
59	\$ 6.67	\$ 8.28	\$ 6.60	\$ 11.85	\$ 6.16	\$ 9.93	\$ 9.79	\$ 7.32
60	197	193	207	182	199	195	180	217
61	3.65	3.41	4.06	4.00	3.62	3.82	3.52	4.24
62	5.3	7.7	9.9	13.6	6.1	10.5	12.2	6.9
63	\$181	\$204	\$215	\$210	\$168	\$205	\$183	\$186
64	134	139	78	118	95	86	108	107
65	\$ 5.77	\$ 6.44	\$ 5.51	\$ 6.08	\$ 5.74	\$ 5.38	\$ 6.31	\$ 7.77
66	10.35	10.31	7.29	8.55	8.19	8.53	8.44	10.59
67	.65	.66	.89	.57	.62	.97	.63	.60
68	.58	.65	.59	.55	.52	.50	.71	.58
69	.68	.69	.56	.79	.65	.89	.96	.78

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Weekly wages, all manufacturing industries, unadjusted ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period..	1926	1926	1935-39	1935-39	1935-39	1935-39	1935-39	1935-39	1939	1935-39
1929.....	95	105	130	129	136	108	84	121	120	110
1930.....	86	88	112	124	114	92	74	110	98	91
1931.....	73	65	77	109	84	61	56	93	74	75
1932.....	65	48	52	95	60	45	48	72	51	58
1933.....	66	51	56	91	62	54	59	68	54	69
1934.....	75	65	76	99	73	58	58	79	70	75
1935.....	80	79	103	101	90	68	68	86	80	87
1936.....	81	81	107	99	104	86	87	98	93	103
1937.....	86	86	120	104	108	92	88	107	111	113
1938.....	79	69	87	98	99	85	87	101	85	89
1939.....	77	65	81	97	99	85	87	108	100	108
1940.....	78	68	86	98	107	94	96	118	114	123
1941.....	87	82	109	104	142	122	117	144	168	156
1942.....	99	105	140	118	197	166	141	187	242	181
1942 June...	99	104	138	118	192	156	132	187	234	176
July.....	99	105	139	118	192	131	111	188	243	178
Aug.....	99	106	143	119	204	134	113	193	255	183
Sept.....	100	108	143	119	208	144	121	198	262	187
Oct.....	100	109	145	120	211	271	226	205	271	191
Nov.....	100	110	144	121	224	200	165	209	280	194
Dec.....	101	114	148	122	226	191	157	215	288	197
1943 Jan.....	102	117	156	124	224	176	142	215	291	199
Feb.....	102	119	160	124	240	185	149	219	297	202
Mar.....	103	123	164	125	260	212	170	224	304	203
Apr.....	104	124	165	126	261	187	148	227	309	203
May.....	104 ¹¹	126	165	126	257 ¹¹	...	...	...	...	203
June.....	104 ¹¹	126	165	127	...	...	...	...	...	201 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

Product	Calendar year average			July 1942	Current months		
	1924-29	1941	1942		May	June	July
Corn, bu.....	\$.81	\$.63	\$.77	\$.81	\$.99	\$1.00	\$1.02
Oats, bu.....	.42	.36	.48	.42	.61	.66	.67
Wheat, bu.....	1.30	.93	1.13	1.06	1.36	1.38	1.44
Barley, bu.....	.66	.55	.74	.65	.88	.91	1.01
Soybeans, bu.....	1.94	1.24	1.65	1.60	1.65	1.66	1.65
Hogs, cwt.....	9.97	9.37	13.37	14.00	14.00	13.80	13.50
Beef cattle, cwt.....	8.57	10.07	11.93	11.80	14.00	14.10	13.80
Lambs, cwt.....	12.22	9.85	12.28	12.90	14.20	14.20	13.60
Milk cows, head.....	78.00	80.00	102.00	99.00	135.00	136.00	130.00
Veal calves, cwt.....	11.27	11.19	13.63	13.30	14.60	14.50	14.50
Sheep, cwt.....	6.52	4.43	5.50	5.20	7.30	7.10	6.90
Butterfat, lb.....	.42	.33	.39	.36	.49	.48	.47
Milk, cwt.....	2.32	2.05	2.40	2.20	2.85	2.85 ¹¹	2.90 ¹¹
Eggs, doz.....	.30	.22	.29	.28	.33	.34	.34
Chickens, lb.....	.21	.15	.19	.19	.24	.25	.26
Wool, lb.....	.36	.37	.40	.39	.43	.45	.43
Apples, bu.....	1.59	1.07	1.53	1.40	2.75	2.75	2.50
Hay, ton.....	13.88	8.49	11.33	9.00	14.70	14.10	14.10
Potatoes, bu.....	1.39	.82	1.32	1.55	2.55	2.60	2.25

¹⁻¹¹For sources of data in tables see May-June issue.

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ILLINOIS FARM ECONOMICS

EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

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ADJUSTMENTS NEEDED TO SECURE MAXIMUM WARTIME AGRICULTURAL PRODUCTION IN ILLINOIS

If Illinois is to achieve the maximum agricultural production, a number of adjustments in crop acreages and in the numbers and finish of livestock will be necessary. These adjustments are necessary if Illinois is to do her part in the food, fat, and fiber production needed in 1944.

The recent report, "An Appraisal of Maximum Wartime Production Capacity in Illinois," published by the Illinois Agricultural Experiment Station, outlines the farm production possibilities in Illinois if proper adjustments in land use and livestock are brought about.

To get the most out of Illinois farms without working considerable harm to their long-time productive capacity may require shifts of four major types.

1. The acreage of land in crops may be increased.
2. The proportion of crops that yield largest amounts of food nutrients per acre must be increased at the expense of lower yielding feed crops.
3. Shifts must be made in the number and kinds of livestock so that the most advantageous use can be made of available feed in order to get the greatest possible amount of human food.
4. Changes in farm practices must be made in order to bring about increased crop yields per acre and greater production per animal as well as the most efficient use of the feed fed.

Articles in *Illinois Farm Economics* are based largely upon findings of the Agricultural Experiment Station.

Adjustments in Crop Acreages and in the Kinds and Numbers of Livestock

Increasing the acreage of land in crops is subject to rather definite limitations. Of the 6,669,000 acres of noncrop land on Illinois farms, 1,913,000 are in woodland. The major part of the remaining 4,756,000 acres includes such nontillable land as permanent pasture, farmsteads, roads, lanes, swamps, and wasteland that cannot be brought into production or that will yield greater returns as pasture than as cropland. Some pasture which could be plowed would result in irreparable erosion damage. Probably the greatest source of new cropland is drained swampland. This acreage, however, would be negligible compared to our total cropland and in many instances would require two years or longer to bring into full production.

Shifting cropland to crops which produce the greatest quantity of food nutrients per acre is one of the most promising and practical adjustments possible. Briefly, it amounts to a shift from small grain crops other than wheat to corn and soybeans; and from low-yielding hay and forage crops to higher yielding ones, especially to the high-yielding legumes and forage crops wherever possible. An increase in the wheat acreage is recommended because of the large food production per acre produced by wheat and the need of nurse crops for seeding legume hay and pasture crops.

Table 1 shows what changes are judged possible and what the maximum safe acreage of intertilled crops is, based upon the fertility of the soil, degree of slope, adaptation to crops, and other factors. According to Table 1, we are rapidly approaching the point of maximum acreage that can be safely grown in intertilled crops even for the few wartime years.

In certain east-central Illinois counties, the proportion of cropland in intertilled crops now exceeds 70 percent. In these intensively cropped

TABLE 1.—ILLINOIS WARTIME CAPACITY IN 1944 AND WARTIME MAXIMUM CAPACITY COMPARED WITH 1943 ACREAGES

	1943		1944 estimated capacity		Wartime maximum estimated capacity	
	Acres	Percent	Acres	Percent of 1943	Acres	Percent of 1943
Corn	8 748 000	100	8 600 000	98.3	8 750 000	100
Soybeans for beans	3 500 000	100	4 100 000	117.1	4 250 000	121.4
Total intertilled crops	13 509 000	100	13 595 000	100.6	13 885 000	102.8
Wheat	1 018 000	100	1 500 000	147.3	1 500 000	147.3
Other small grain	3 580 000	100	3 322 000	92.8	3 322 000	92.8
All tame hay	2 630 000	100	2 600 000	98.9	2 600 000	98.9
Rotation pasture	3 100 000	100	2 900 000	93.5	2 600 000	83.9

TABLE 2.—SOYBEAN PRODUCTION IN ILLINOIS IN 1930 AND 1943

Year	Total	Hay	Threshed	Total production
	<i>acres</i>	<i>acres</i>	<i>acres</i>	<i>bushels</i>
1930.....	720 000	310 000	410 000	6 970 000
1943.....	4 216 000	600 000	3 500 000	73 500 000

areas, soil erosion is increasing and losses from crop diseases and insects are becoming greater. On some of these farms even land with less than 2 percent slope is showing harmful erosion. It is this area which has so rapidly increased soybean production while maintaining as great an acreage of corn as has been grown in recent years. In fact in some of the best areas of Illinois the percent of land in corn and beans and other intertilled crops has increased by 20 percent over the past ten years, while in other parts of the state, the increase in intertilled crops has been not greater than 10 percent. This shows that, with the demands of the war, we are carrying on a more destructive type of agriculture in our better soil areas and in areas where a large part of the crops are sold from the farm.

A rapid increase in the soybean acreage grown in Illinois is shown in Table 2. From 1930 to 1943, soybean acreage increased 586 percent and production grew from 6,970,000 bushels to 73,500,000 bushels, while the corn acreage dropped from 9,175,000 acres to 8,748,000 acres. Illinois produced 393,660,000 bushels of corn in 1943, 62 percent more than was produced in 1930. The maximum wartime acreage of soybeans for grain for Illinois was set at 4,250,000 compared with 4,100,000 for 1944 and an estimated 3,500,000 for 1943. The maximum acreage of corn was set at 8,750,000 compared with 8,600,000 acres for 1944 and an estimated 8,748,000 in 1943. The maximum intertilled acres of all crops in Illinois were set at 13,885,000 compared with 13,595,000 for 1944 and an estimated 13,509,000 in 1943. This indicates that Illinois is rapidly reaching the maximum acreage of intertilled crops that can be grown under the stress of wartime.

Increased acreages of Irish and sweet potatoes, canning vegetables, and wheat, and decreased acreages of oats, nonlegume hays, and rotation pastures are other land-use adjustments that would do most toward obtaining the maximum production of essential food nutrients. On many farms greater use can be made of emergency pastures which will give a high yield for short periods of time to tide over periods when pasture is apt to be short. This will release more land for use in crop production.

Shift in kind and number of livestock represents another necessary adjustment for maximum production of essential food products. From

the standpoint of supplying the essential dietary needs, milk and eggs are more seriously needed than other livestock products. Along with the shift to an increased use of cereals directly as human food, the minimum requirements of milk and eggs make it imperative that the production of these products be pushed to the limit. Dairy cattle can use larger amounts of roughage, but they, together with poultry, will require a larger proportion of our feed grain crops. It is estimated that each of these two classes of livestock utilize from 8 to 9 percent of the total grain fed. As the amount of these classes of livestock fed increases, less grain will be available for feeding hogs, feeder cattle, and sheep. For most economical gains, pigs should be marketed at weights of 180 to 225 pounds. Therefore, the recommendation of maximum food production includes a reduction in the number of hogs and a reduction in the market weight to the 180- to 225-pound level, so as to reduce total production in Illinois in 1944 by 10 to 15 percent below that of 1943. Cattle and sheep will need to be marketed with less finish with more of their gain secured from hay and pasture and less from feed grain. These two classes of livestock together consume about the same amount of grain under normal conditions that is consumed by either dairy cattle or poultry. Hogs normally receive about 60 percent of the entire corn crop grown in Illinois.

The wartime maximum production recommendation for livestock calls for the following percentage changes from the 1943 production. Increases of 3 percent in milk production, 7 percent in egg production, 2 percent in numbers of chickens raised, and decreases of 9 percent in number of sows to farrow, 28 percent in commercial broiler production, 20 percent in sheep and lambs put on feed, 8 percent in the total pounds of hogs produced, and no change in cattle put on feed in the United States.

The fourth means of increasing agricultural production — through adoption of improved farm practices — will be discussed in the next issue of the *Illinois Farm Economics*. H. C. M. CASE and E. L. SAUER

THE HOG PRICE SITUATION — SOME ASPECTS OF SUPPORT AND CEILING PRICES

At the present time and through September 1944 the Department of Agriculture is committed to support the price of hogs at a level of not less than \$13.75 at Chicago. On October 1, 1944, the support price will be lowered to \$12.50 and furthermore, it will apply to light instead of heavy hogs. For sometime past, hog prices have also been under the influence of price ceilings, but thus far the price ceilings have been on meats rather than upon live hogs. Recently, however, the OPA has announced ceiling prices on live hogs which include \$14.75 per hundredweight at Chicago. These

ceiling prices are to become effective on October 4. There are many uncertainties as to the effect of the ceiling price, but the difference of one dollar between it and the current support price at Chicago is much less than the normal seasonal fluctuation of prices and will probably occasion some rather marked changes in the seasonal marketing of hogs. As a result, there will probably be a tendency for farmers to sell their finished hogs whenever it is most convenient.

On the average in past years, hog prices in the months of August and September have been about 20 percent higher than in the month of December. December is, of course, the month when marketings are usually the heaviest and prices the lowest of any month in the year. July, August, and September, on the other hand, are months when marketings are relatively low and prices relatively high. The usual seasonal movement of hog prices provides an incentive for early breeding of sows for the spring

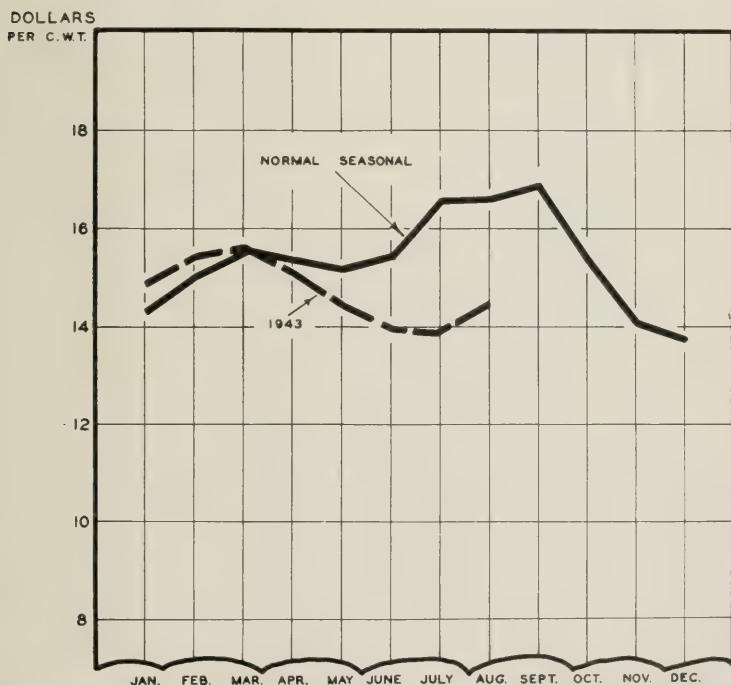


FIG. 1.—PRICES OF BARROWS AND GILTS AT CHICAGO,
NORMAL SEASONAL AND 1943

The Department of Agriculture is committed to a support price of \$13.75 at Chicago. A normal seasonal movement with a low of \$13.75 in December is shown in comparison with the actual monthly average prices of barrows and gilts in 1943. Since April, the actual prices have been below the normal seasonal.

pig crop and for early marketing of hogs from that crop. It also provides an incentive for maintaining a larger fall pig crop than would be most convenient in farm operations, for prices in April and May average about 10 percent higher than prices in November, December, and January.

In Figure 1 is shown a normal seasonal movement for prices of medium weight hogs at Chicago based upon an index of seasonal variation. The low of \$13.75 in December is the support price now current. It will be seen that with this figure taken as the level for December, a normal seasonal movement would involve prices of over \$16.00 in each of the months, July, August, and September. But under the recently announced ceiling prices of OPA, \$14.75 is the limit.

It will also be noted that in both June and July of this year the average price of barrows and gilts at Chicago fell below \$14.00 a hundred-weight. This is a very low price for that season of the year in view of the support price and the normal seasonal. It is more nearly in line with the ceiling price which is soon to go into effect.

For a person without "inside" information concerning the operation of both OPA and WFA, it is difficult to judge just why the support and ceiling prices have been set at levels which allow so little seasonal fluctuation. However, it would seem that the support price of \$14.75 was set at a level too high to be consistent with the general price policies of OPA, and that a ceiling price of \$16.50 on hogs would be badly out of line with OPA ceiling prices for other livestock products and for corn. Consequently, it may have been considered that the best way out of a bad situation was to provide for a ceiling price as low as could possibly be maintained in view of the existing support price.

The fact that a lower support price for the period after September 1944 has already been announced fits in with the hypothesis that it is now considered by the Department of Agriculture officials that the \$13.75 support price for hogs was too high and has tended, in conjunction with the current corn price ceiling, to result in too heavy a feeding of corn to hogs.

It is interesting to note that a low of \$12.50 and a high of \$14.75 would allow for approximately the average seasonal fluctuation of hog prices. The level of \$12.50 is, of course, the support price which has been set by the Department of Agriculture for the period October 1, 1944 to March 31, 1945. If the ceiling price of \$14.75 is maintained, it would be possible, as far as these two price controls are concerned, to have approximately a normal seasonal movement in hog prices after June of next year. In view of this it would appear that farmers, in planning their future breeding operations, should assume that somewhere near the normal seasonal fluctuation may be permitted during the latter part of 1944.

However, it should not be assumed that prices will necessarily follow

an approximately normal seasonal pattern within the limits imposed by the support and ceiling prices.

One possibility is that there will be a constant pressure against the price ceilings, not only in August and September, but also in December and January, with the result that prices would be seldom, if ever, below the ceiling level. This would probably be the result if there were no governmental controls affecting hog prices other than the price ceilings, but meat rationing and the purchasing policies of the armed forces and for lend-lease are also to be reckoned with. The very fact that the average price of barrows and gilts at Chicago was below \$14.00 for both June and July is evidence that hog prices will not necessarily press constantly against the \$14.75 ceiling.

In this connection, it is pertinent to note that when the Livestock and Meat Council submitted its plan for a "meat management program," their statement said that, "The attempt of the meat management program should be to bring actual prices under such control that they will not be pressing on ceilings." In a general way, the War Meat Board, through the agencies which it represents, seems to be following out the plan submitted by the Livestock and Meat Council. The success of the Board's efforts, so far as hogs are concerned, will be measured in part by whether or not hog prices actually do follow an approximately normal seasonal variation within the limits of the support and ceiling prices.

It is difficult to judge whether the very narrow limits which now exist between ceiling and support prices for hogs will seriously affect the movement of hogs to market during the next 10 months. It would not be surprising, however, if prices should recede to about the support level by November. Once the support price has been reached, farmers will have no price incentive for hurrying their hogs to market. However, there will be some incentive for holding hogs and feeding for a long period in the hope that higher prices may have been obtained for animals fed out late. These factors may result in very heavy marketings during December.

Inasmuch as the lowering of the support price from \$13.75 to \$12.50 will occur at a time when marketings are seasonally small and when prices may be expected to be well above the support level, this change is not likely to result in abnormal short-time changes in hog marketing next summer and fall. The application of a \$14.75 ceiling in early October, on the other hand, is probably resulting in some speeding up of marketings during the latter part of September in order that sellers may realize somewhat higher prices for the better quality hogs.

Just what will be the impact of the new ceilings on the hog price structure after October 4 is highly uncertain. From the week ending May 1 and through the week ending September 18 the weekly average price of

all packer and shipper purchases at Chicago was never over \$14.75. Nevertheless, many individual lots of hogs were sold at prices considerably higher. Is it possible that commission men may in the future sell "mixed lots" of hogs which will not average over \$14.75 per hundredweight, but in which some of the animals are really worth considerably more and some considerably less than the ceiling price?

The importance of any such practice of selling in mixed lots would depend largely upon the percentage of packing sows which might be included. It is to be noted, however, that the months July to September, when hog prices are seasonally highest, are the months in which the largest number of packing sows commonly go to market. Hence, the months when prices are most likely to be pressing against the ceiling are the same as those in which the selling of mixed lots might most easily be used partially to circumvent the apparent intent of the price ceilings.

An example of hog price relationships at Chicago in two weeks of 1943 will perhaps help to clarify the problem. See Table 1.

TABLE 1.—CHICAGO HOG PRICES IN SELECTED WEEKS OF 1943

Description of price	Week ending	
	May 1	Sept. 11
Average cost of packer and shipper purchases:		
All purchases.....	\$14.75	\$14.51
Barrows and gilts.....	14.76	14.85
Sows.....	14.58	14.24
Average quotations:		
Barrows and gilts, 200-220 lb., good-to-choice.....	\$14.79	\$15.06
Barrows and gilts, 240-270 lb., good-to-choice.....	14.78	14.95
Sows, 300-330 lb., good-to-choice.....	14.65	14.46
Sows, 450-550 lb., good.....	14.52	14.04

By coincidence the average price of all purchases for the week ending May 1 was exactly \$14.75. The significant point, however, is that even 200- to 220-pound barrows and gilts were quoted at only 4 cents above this figure. For the week ending September 11, on the other hand, 200- to 220-pound barrows and gilts sold at 55 cents per hundredweight above the average level for all purchases. For the week of May 1, packing sows comprised only 5 percent of all purchases, whereas for that ending September 11 they amounted to 45 percent of the total.

Obviously, if a lot of hogs comprised half of packing sows and half of medium weight, choice, barrows and gilts should be sold at \$14.75, the seller would really be getting more than \$14.75 for his barrows and gilts. Consequently, it would appear that even though the nominal ceiling price

may be maintained at \$14.75, the really effective ceiling price for good and choice hogs next summer may be well above \$15.00.

E. J. WORKING

RELATIVE PRODUCTION AND INCREASES IN PRODUCTION ON SMALL, MEDIUM, AND LARGE FARMS^a

The production of feed, livestock, and livestock products on farms of different sizes enrolled in the Farm Bureau Farm Management Service during the three years of 1940, 1941, and 1942, were compared. The 430 farms used in the study were operated by the same men and were of the same size during all three years. They are located in 23 counties in the heart of the corn belt across north-central Illinois. About one-half of the farms are in the cash grain area of eastern Illinois and about one-half in the beef cattle and hog area of western Illinois.

The 430 farms were divided into three groups according to size as follows: 93 small farms of 160 acres or less averaged 144 acres per farm; 233 medium sized farms of 160.1 to 320 acres averaged 246 acres per farm; and 104 large farms of 320.1 or more acres averaged 439 acres per farm. A study of changes in production of feed, livestock, and gross earnings per 100 acres of land and per man working was made (Table 1).

Production per 100 acres of farmland. During the three years of 1940, 1941, and 1942, for each 100 acres of farmland, the small, medium, and large farms produced respectively 101.9, 94.7, and 88.5 tons of digestible feed; \$2,805, \$2,096, and \$1,601 worth of livestock and livestock products at 1930 to 1941 prices; and \$5,350, \$4,502, and \$3,908 worth of gross farm earnings (gross farm earnings is a fair measure of total farm production on farms like these where most of the income on the different farms is from the same sources). The larger amount of feed produced per acre on the smaller farms was due mostly to higher yields of crops and larger acreages of corn.

The larger production of livestock and of gross farm earnings on the smaller farms was largely due to more intensive livestock production. More purchased grain was fed on the smaller and medium sized than in the larger farms in addition to that produced on the farms.

The increased production per 100 acres of land in 1942 over that in 1940 on the smaller farms as compared with the larger farms was greater by 6.3 tons of digestible feed, \$268 worth of livestock and livestock products, and \$2,338 worth of gross earnings.

^aThis is a supplement to the article, "Recent Changes in Feed and Livestock Production on Corn-belt Farms," which appeared in the July 1943 issue of *Illinois Farm Economics*.

TABLE 1.—CHANGES IN FEED, LIVESTOCK, AND GROSS EARNINGS PRODUCED DURING THE YEARS 1940, 1941, AND 1942 ON FARMS OF DIFFERENT SIZES IN NORTH CENTRAL ILLINOIS^a

Item	3-year average	1940	1941	1942	Change from 1940 to 1942
Total digestible nutrients produced per 100 acres ^b					
Small farm—tons.....	101.9	87.4	106.2	112.1	24.7
Medium farms—tons.....	94.7	82.5	98.4	103.3	20.8
Large farms—tons.....	88.5	77.8	91.5	96.2	18.4
Average of all farms—tons.....	93.1	81.2	96.6	101.4	20.2
Total digestible nutrients produced per man					
Small farms—tons.....	98.2	89.0	103.0	101.9	12.9
Medium farms—tons.....	122.7	109.6	128.5	129.6	20.0
Large farms—tons.....	146.7	132.1	150.2	157.3	25.2
Average of all farms—tons.....	126.4	113.6	131.5	133.5	19.9
Value of livestock and livestock products produced per 100 acres ^c					
Small farms—value.....	\$2 805	\$2 490	\$2 858	\$3 068	\$ 578
Medium farms—value.....	2 096	1 873	2 127	2 286	413
Large farms—value.....	1 601	1 425	1 644	1 735	310
Average of all farms—value.....	1 981	1 768	2 022	2 160	392
Value of livestock and livestock products produced per man					
Small farms—value.....	\$2 703	\$2 536	\$2 772	\$2 788	\$ 252
Medium farms—value.....	2 714	2 488	2 777	2 866	378
Large farms—value.....	2 654	2 420	2 698	2 836	416
Average of all farms—value.....	2 689	2 474	2 752	2 843	369
Gross farm earnings per 100 acres					
Small farms—value.....	\$5 350	\$3 295	\$5 544	\$7 210	\$3 915
Medium farms—value.....	4 502	2 854	4 722	5 930	3 076
Large farms—value.....	3 908	2 500	4 146	5 077	2 577
Average of all farms—value.....	4 366	2 766	4 590	5 742	2 976
Gross earnings per man					
Small farms—value.....	\$5 155	\$3 357	\$5 377	\$6 552	\$3 195
Medium farms—value.....	5 832	3 794	6 164	7 435	3 641
Large farms—value.....	6 476	4 246	6 803	8 296	4 050
Average of all farms—value.....	5 929	3 871	6 246	7 560	3 689

^aNinety-three small farms contained 160 or less acres (average of 144 acres); 233 medium farms, 160.1 to 320 acres (average of 246 acres); 104 large farms, 320.1 or more acres (average of 439 acres).

^bData from Morrison's "Feeds and Feeding" were used to calculate digestible nutrients in grain, hay, and silage. Seventeen pounds per day of pasture were used to convert pasture days into digestible nutrients; 17 pounds per day being the author's estimate based on various data.

^cThe values of livestock and livestock products produced on these farms were calculated at 1930 to 1941 Illinois farm prices as reported by the crop reporting service; the 12-year period providing a fairly normal relationship between prices of different products.

The best use of land, from the viewpoint of maximum and increased production, is evidently obtained on the smaller and medium sized corn-belt farms. However, land is only one of the three major factors involved in the wartime production; the best uses of labor and machinery are equally essential.

Production per man. For each 12 months of labor used during the three years of 1940, 1941, and 1942, there were produced on the small, medium, and large farms respectively, 98.2, 122.7, and 146.7 tons of

digestible feed; \$2,703, \$2,714, and \$2,654 worth of livestock and livestock products; and \$5,155, \$5,832, and \$6,476 worth of gross earnings.

The 50 percent greater production of feed per man on the larger than on the smaller farms was due mostly to the larger number of acres of crops worked per man on the larger farms. As three-year averages there were 58, 74, and 89 ten-hour days of work on crops for each man working on the smaller, medium, and larger farms, respectively.

The livestock income per man was approximately the same on the three groups of farms. However, since more time per man was spent on livestock on the smaller farms, the livestock returns per day of labor spent on livestock was greater on the larger farms; the values of livestock and livestock products per day of labor spent on livestock on the smaller, medium, and larger farms were \$17.35, \$18.34, and \$19.67, respectively.

The increased production per man in 1942 over that in 1940 on the larger farms as compared with the smaller farms was greater by 12.3 tons of digestible feed, only \$164 worth of livestock and livestock products, and \$855 worth of gross earnings.

The best use of labor, from the viewpoint of maximum and increased crop production, is evidently obtained on the larger corn-belt farms. From the viewpoint of livestock production, maximum production per man is about equally possible on the smaller, medium sized, and larger farms; however, increased production per man was somewhat greater from year to year on the larger farms.

Conclusions regarding size of farms. These data indicate that the maximum wartime production from land and labor can be obtained on the smaller farms by increasing their livestock enterprises or by assisting in work on larger neighboring farms so as to make more complete use of the labor available on the smaller farms. Maximum wartime production from land and labor can be obtained on the larger farms by increasing yields per acre (especially of the best feed producing crops) and by increasing the efficiency of the labor.

M. L. MOSHER

Footnotes for the last page:

¹⁻¹²The first source is for annual data; the second is for current data from which tables may be brought to date.

¹Survey of Current Business, 1936 supplement, U. S. Department of Commerce; Subsequent monthly issues. ²Same as footnote 1. ³Illinois Crop and Livestock Statistics, Circular 438 (1937); monthly mimeographs of Statistical Tables for Illinois Crop Report, converted from 1910-1914 = 100 to 1924-1929 = 100 by multiplying by .7151. ⁴Monthly Local Market Price Report, Bureau of Agricultural Economics, U.S.D.A. ⁵Calculated from data furnished by Bureau of Agricultural Economics; Survey of Current Business, seasonally adjusted. ⁶Calculated by Department of Agricultural Economics, University of Illinois, seasonally adjusted. Data on receipts from sale of principal farm products (government payments not included) from Farm Income Situation, Bureau of Agricultural Economics monthly mimeograph. ⁷Obtained by dividing Index of Illinois Farm Income (column 6) by Index of Prices Paid by Farmers (column 4). ⁸For 1929-1942 inclusive, from special mimeographed release by Bureau of Agricultural Economics; currently, not adjusted for seasonal variation from Poultry and Egg Situation, beginning with March, 1943, issue. ⁹Survey of Current Business, December, 1942 and subsequent monthly issues, unadjusted for seasonal variation. Prior to 1939, "factory payroll" index, with 1923-1925 base, multiplied by 1.087 to obtain the "Weekly Wages" index with 1939 base. ¹⁰Federal Reserve Bulletin of Federal Reserve Board, September, 1933, and subsequent issues; Survey of Current Business, seasonally adjusted. ¹¹Preliminary estimate. ¹²Illinois Crop and Livestock Statistics, Circular 438; Monthly price releases, State Agricultural Statistician.

H. P. Rusk

Director, Extension Service in
Agriculture and Home Economics

FREE—Cooperative Agricultural Extension
Work. Acts of May 8 and June 30, 1914

TABLE A.—INDEXES OF UNITED STATES AGRICULTURAL AND BUSINESS CONDITIONS

Year and month	Commodity prices				Income from farm marketings			Non-agricultural employee's compensation ⁸	Weekly wages, all manufacturing industries, unadjusted ⁹	Industrial production ¹⁰
	Wholesale prices		Illinois farm prices ³	Prices paid by farmers ⁴	U. S. in money ⁵	Illinois				
	All commodities ¹	Farm products ²				In money ⁶	In purchasing power ⁷			
Base period..	1926	1926	1935-39	1935-39	1935-39	1935-39	1935-39	1935-39	1939	1935-39
1929.....	95	105	130	129	136	108	84	121	120	110
1930.....	86	88	112	124	114	92	74	110	98	91
1931.....	73	65	77	109	84	61	56	93	74	75
1932.....	65	48	52	95	60	45	48	72	51	58
1933.....	66	51	56	91	62	54	59	68	54	69
1934.....	75	65	76	99	73	58	58	79	70	75
1935.....	80	79	103	101	90	68	68	86	80	87
1936.....	81	81	107	99	104	86	87	98	93	103
1937.....	86	86	120	104	108	92	88	107	111	113
1938.....	79	69	87	98	99	85	87	101	85	89
1939.....	77	65	81	97	99	85	87	108	100	108
1940.....	78	68	86	98	107	94	96	118	114	123
1941.....	87	82	109	104	142	122	117	144	168	156
1942.....	99	105	140	118	197	166	141	187	242	181
1942 July....	99	105	139	118	192	131	111	188	243	178
Aug.....	99	106	143	119	204	134	113	193	255	183
Sept.....	100	108	143	119	208	144	121	198	262	187
Oct.....	100	109	145	120	211	271	226	205	271	191
Nov.....	100	110	144	121	224	200	165	209	280	194
Dec.....	101	114	148	122	226	191	157	215	288	197
1943 Jan.....	102	117	156	124	224	176	142	215	291	199
Feb.....	102	119	160	124	240	185	149	219	297	202
Mar.....	103	123	164	125	260	212	170	224	305	202
Apr.....	104	124	165	126	261	187	148	227	309	203
May.....	104	126	165	126	258	203	161	231	313	203
June.....	104 ¹¹	126	166	127	256	188	148	237	318	202
July.....	103 ¹¹	125	166	128	256 ¹¹	...	...	...	...	205 ¹¹

TABLE B.—PRICES OF ILLINOIS FARM PRODUCTS¹²

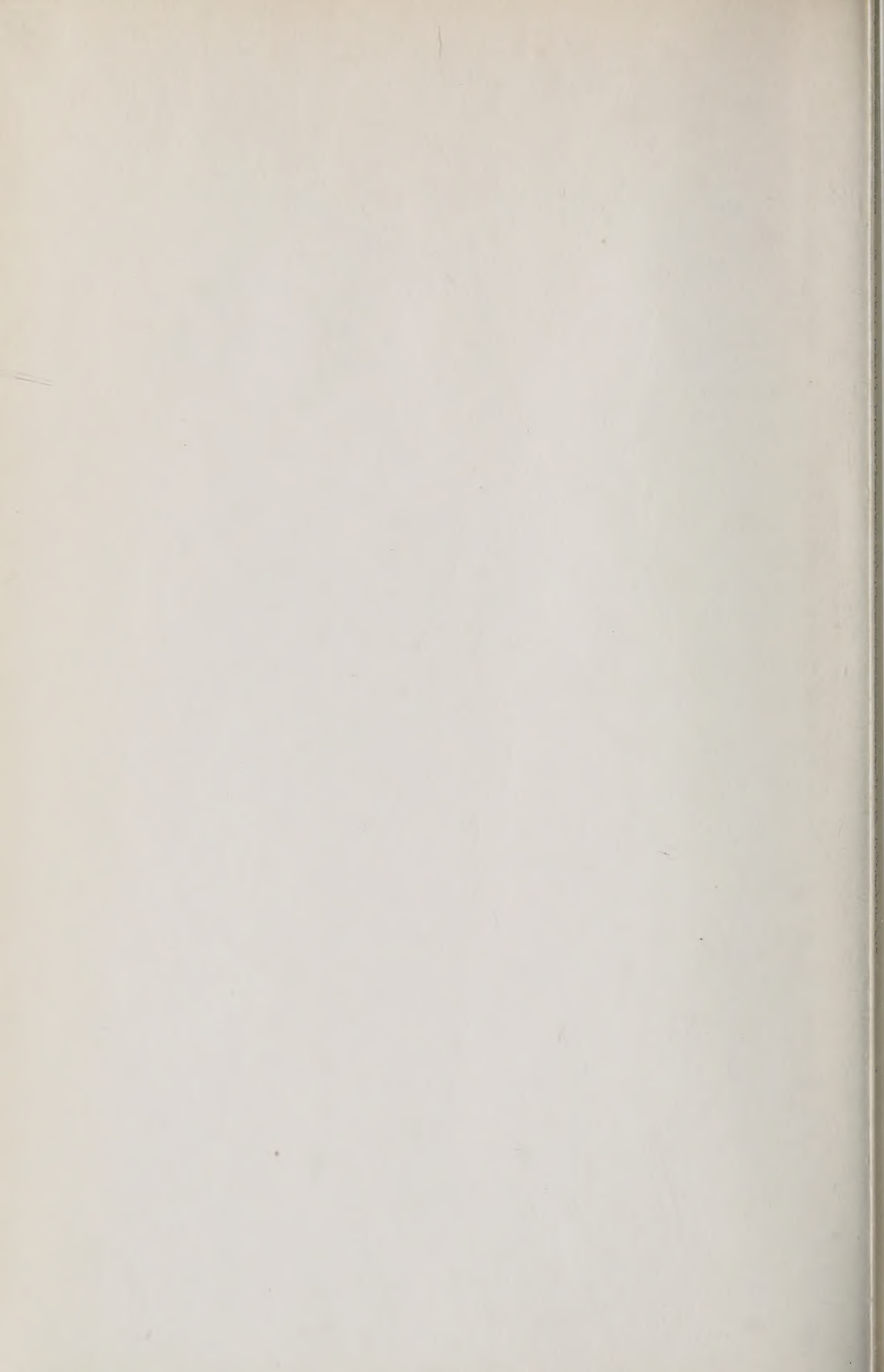
Product	Calendar year average			Aug. 1942	Current months		
	1935-39	1941	1942		June	July	Aug.
Corn, bu.	\$.66	\$.63	\$.77	\$.81	\$1.00	\$1.02	\$1.02
Oats, bu.	.41	.36	.48	.42	.66	.67	.67
Wheat, bu.	1.86	.93	1.13	1.07	1.38	1.44	1.47
Barley, bu.	.62	.55	.74	.70	.91	1.01	1.04
Soybeans, bu.	1.90	1.24	1.65	1.57	1.66	1.65	1.66
Hogs, cwt.	8.52	9.37	13.37	14.50	13.80	13.50	14.10
Beef cattle, cwt.	7.88	10.07	11.93	12.50	14.10	13.80	13.50
Lambs, cwt.	8.36	9.85	12.28	13.10	14.20	13.60	12.90
Milk cows, head	58.00	80.00	102.00	100.00	136.00	130.00	128.00
Veal calves, cwt.	8.66	11.19	13.63	13.90	14.50	14.50	14.60
Sheep, cwt.	3.58	4.43	5.50	5.20	7.10	6.90	6.70
Butterfat, lb.	.27	.33	.39	.39	.48	.47	.47
Milk, cwt.	1.68	2.05	2.40	2.35	2.85	2.95	2.95 ¹¹
Eggs, doz.	.19	.22	.29	.29	.34	.34	.35
Chickens, lb.	.15	.15	.19	.20	.25	.26	.26
Wool, lb.	.25	.37	.40	.40	.45	.43	.43
Apples, bu.	1.08	1.07	1.53	1.35	2.75	2.50	2.50
Hay, ton	9.39	8.49	11.33	9.30	14.10	14.10	14.50
Potatoes, bu.	.91	.82	1.32	1.15	2.60	2.25	2.00

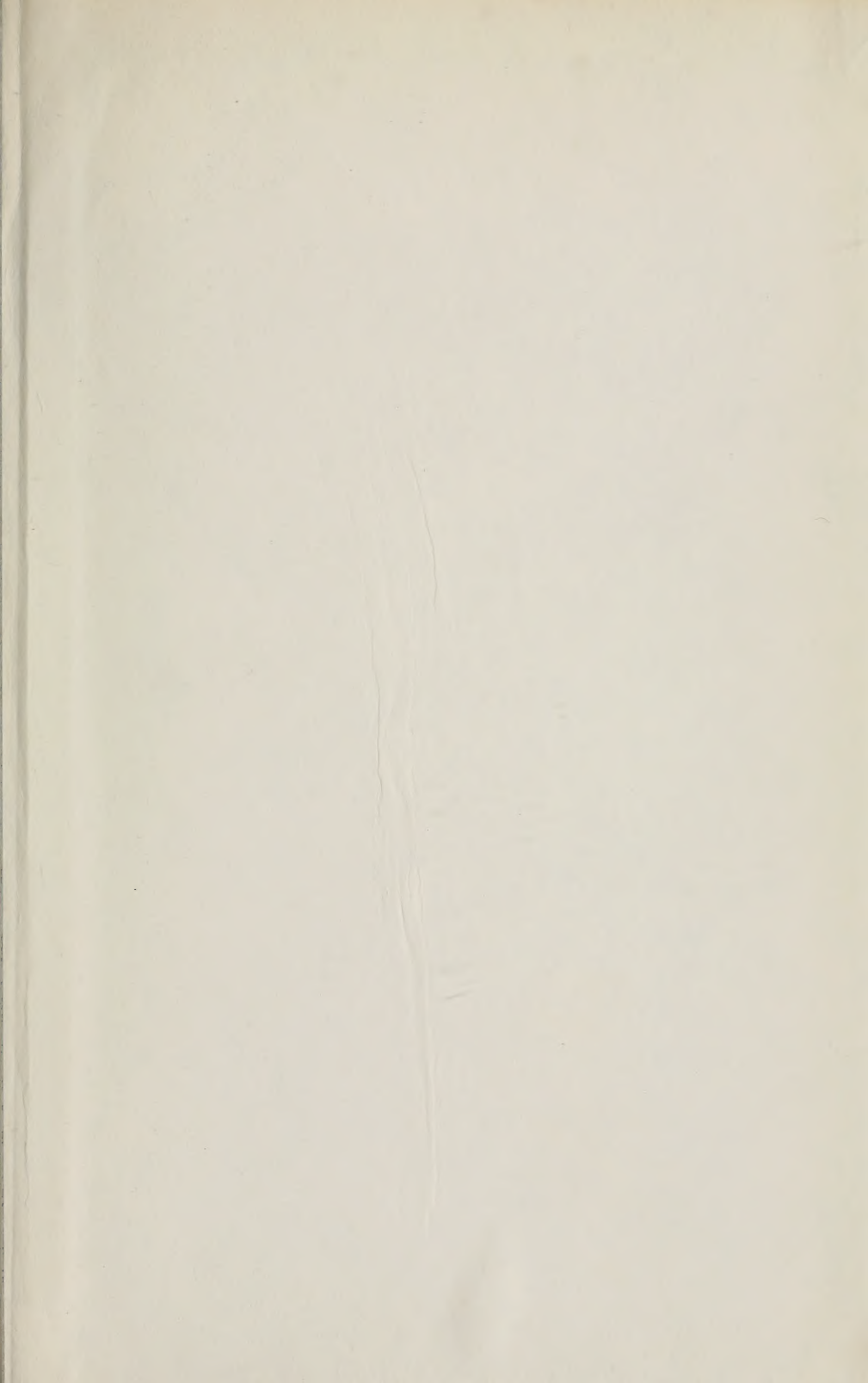
¹¹ ¹²For sources of data in tables see previous page.

Cooperative Extension Work in Agriculture and Home Economics: University of Illinois, College of Agriculture, and the United States Department of Agriculture cooperating. H. P. Rusk, Director. Acts approved by Congress May 8 and June 30, 1914.









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